Transpennine Route Upgrade West, Huddersfield Station: Roofs A, B & C

Huddersfield, West Yorkshire

Historic Building Investigation and Recording Interim Report

January 2024

Client: BAM Nuttall on behalf of TRU Alliance

Issue No: V. 2
OA Reference No: L11502
NGR: SE 14331 16912

oxford archaeology

Client Name:	BAM Nuttall on behalf of TRU Alliance
Document Title:	Transpennine Route Upgrade, Huddersfield Station: Roofs A, B & C, Huddersfield, West Yorkshire
Document Type:	Historic Buildings Investigation and Recording Interim Report
Report No.:	2023-24/2308
Grid Reference:	SE 14331 16912
Planning Reference:	2023/62/91403/W
Site Code:	TURW23
Invoice Code:	L11502
OA Document File Location:	X:\Paul\Projects\L11502_TRU_West_Project\Report\Huddersfield_Station_Roofs
OA Graphics File Location:	X:\Paul\Projects\L11502_TRU_West_Project\Report\Huddersfield_Station_Roofs\Figs
Issue No:	V. 2
Date:	04 January 2024
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Transpennine Route Upgrade, Huddersfield Station: Roofs A, B & C, Huddersfield, West Yorkshire

Historic Buildings Recording

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Contents

List of Figures

List of Plates

SUMMARY

In April 2023, Oxford Archaeology (OA) was commissioned by BAM Nuttall, on behalf of the TRU Alliance, to undertake a Level 2 (enhanced) and Level 3 Historic Building Survey of the trainshed Roofs A, B and C at the Grade I Listed Huddersfield Station (NHLE 1277385), Huddersfield, West Yorkshire (NGR: SE 14331 16912). The work, which was stipulated by Kirklees Council (2021/65/91328/W) as a condition of Listed Building Consent, was undertaken ahead of the replacement of Roofs B, C and the southern section of Roof A (Manchester end) and the retention and strengthening of the remainder of Roof A as part of a series of works along the Transpennine Route Upgrade (TRU). The survey was carried out on the 4th October 2023.

The survey showed that Roofs A and B were completed in a single phase of development in 1886 following a programme of station enlargement during the 1880s with historic OS mapping suggesting Roof C was either contemporary with Roofs A and B or constructed shortly after (1887-1889). The two main wrought iron pitched-trussed Roofs of A and B were rare surviving examples of 'Euston Roofs', a style of pitched roof common to a number of stations during the nineteenth century, particularly those of the LNWR. Their construction enabled them to span the majority of the station platform enlargements, replacing an original single pitch roof of the 1840s, of which Roof A followed a similar footprint, and a later roof which collapsed during construction in 1885. Investigation determined the roofs retained much of their original wrought iron construction with the only notable modifications being the reduction in length at the northern end sometime during the second half of the twentieth century, and the removal of the roof lantern formerly above Roof A. The presence of two decorative cast iron supporting columns shared between Roofs A and B were at odds with the rest of the wrought iron components and may have been associated with an earlier phase or period in the station's history, but this was undetermined. The roof's primary function of providing shelter and protection from the weather for station passengers, personnel and structures below, continues to perform this today.

Roofs A, B and C, preserve within their fabric evidence of the growth in the railway network and the expansion of Huddersfield Station during the late nineteenth century. Their construction reflects the style, materials and engineering developments of the period and their survival contributes to the historic landscape of the station and adjacent goods yard. They provide context to Huddersfield Station (NHLE 1277385) and the neighbouring Large Brick Warehouse (NHLE 1228533), and the wider historic environment of Huddersfield's industrial past.

1 INTRODUCTION

1.1 Project Background

1.1.1 In April 2023, Oxford Archaeology (OA) was commissioned by BAM Nuttall to undertake an Historic Investigation and Building Recording of the trainshed Roofs A, B and C which form the roof canopies of the Grade I Listed Huddersfield Railway Station (NHLE 1277385; PRN 6525; Fig 1). The roofs date from a time when the station was expanded during the 1880s with Roofs A and B being notable rare surviving examples of 'Euston roofs', a style of pitched roof common to a number of stations during the nineteenth century, particularly those of the LNWR (Network Rail Heritage Assessment 2021, 7).

1.1.2 Huddersfield Station Roof is subject to Listed Building Consent following the proposals for the replacement of Roofs B, C and the southern section of Roof A (Manchester end), with the remainder of Roof A being retained and strengthened. This forms part of an agreed mitigation strategy within a programme of works along the Transpennine Route Upgrade (TRU), granted by the Conservation Officers at Kirklees Council, acting on advice of the Principal Archaeologist at West Yorkshire Archaeological Advisory Service (2021/65/91328/W), subject to the completion of a Level 3 historic building survey of Roofs B, C and the southern section of A (bays 1 & 2), and a Level 2 (enhanced) historic building survey of the remainder of Roof A (Fig 4). The scope of the recording agreed to discharge the condition (defined in section 5.2 and 5.3 of the Written Scheme of Investigation (WSI) (*Appendix A*) stipulated that a Level 3 survey should comprise '*an analytical record*', with a Level 2 (enhanced) survey comprising '*an enhanced descriptive record*', in accordance with the Historic England guidance as detailed in *Understanding Historic Buildings: A Guide to Good Recording Practice* (Historic England 2016), prior to the commencement of works.

1.1.3 The necessary fieldwork was completed on 4th October 2023. This document forms an interim report following the initial site visit. Once the scaffolding is erected around the station, a further visit will be undertaken to finish recording the structures, with a subsequent final report being produced.

1.2 Aims and Objectives

1.2.1 The principal aim of the current report was to document the current form and survival of Huddersfield Station trainshed roof prior to its replacement (Roofs B, C and southern section of A (bays 1 & 2)) and retention and strengthening (majority of Roof A), in order to provide a lasting record of the structure's present state. To achieve these aims the following objectives were proposed:

- To record Roofs A, B and C of Huddersfield Station, to a Level 3 and Level 2 (enhanced) standard, as defined in Section 5.2 and 5.3 of the WSI, in line with the Historic England Standards (2016);
- To disseminate the results of the recording works through deposition of an ordered digital archive and detailed report with the West Yorkshire Historic Environment Record (HER); and West Yorkshire

Archive Service, in accordance with the requirements of the West Yorkshire Archaeological Advisory Service (WYAAS); and

- To disseminate the results of the recording works through deposition of digital data and report with the Archaeology Data Service (ADS) and submit details of the project to the Online Access to Index of Archaeological Investigations (OASIS) Project.

1.3 Location

1.3.1 Huddersfield Railway Station (NHLE 1277385; SE 14347 16903) was located within the Huddersfield Town Centre Conservation Area (Kirklees Metropolitan Authority, Area no 36) and had a principal elevation facing south-east (simplified in this report to east) onto St George's Square. Immediately to the west was the Large Brick Warehouse (NHLE 1228533) and the associated goods yard with the Tower (NHLE 1289593) located in the north-western corner (Fig 2). Approximately 130m to the north-east was the first span of Huddersfield Viaduct (NHLE 1223531). The Roof canopies were to the rear (west) of the principal station building with the larger 'Roof A', spanning platforms 1-4. 'Roof B' spanned the remaining island platforms and platform 8, with the cantilevered 'Roof C' connected to 'Roof B' over the edge of platform 8 (Network Rail Heritage Assessment 2021, 7). The station is located along the Transpennine Route and is approximately 22.5km to the south-west of Leeds and 35km north-east of Manchester.

1.3.2 Locally, the soils are characterised as freely draining slightly acid loamy soils (Soilscapes 2023) that lie upon a head of clay, silt, sand and gravel, a superficial sedimentary deposit formed during the Quaternary period (BGS 2023). This in turn overlies a bedrock geology of Pennine Lower Coal Measures Formation formed during the Carboniferious period (*ibid*).

1.4 Methodology

1.4.1 *Historic building recording to a Level 3 standard*: a Level 3 record is defined in the Historic England guidance as: *"an analytical record"* which will produce an analysis of the building's development and use and discuss in detail the evidence on which this analysis is based (*Appendix A*). The record may contain some discussion of the structure's stylistic or historic context (*ibid*).

1.4.2 *Historic building recording to a Level 2 (Enhanced) standard*: a Level 2 (Enhanced) record is taken from Historic England guidance on Level 2 and Level 3 record and intended to be read as: "*an enhanced descriptive record*" which will produce an account of its development and use but will not discuss in detail the evidence on which this analysis is based (*Appendix A*). The record may contain some discussion of the structure's stylistic or historic context (*ibid*).

Measured Survey

1.4.3 *Analytical / Descriptive Record:* written records using OA's *pro-forma* record sheets were made of all principal building elements, both internal and external, as well as any features of historical or architectural significance.

Particular attention was paid to the relationship between those areas of the building where its development, and any alterations, could be observed.

1.4.4 *Drawings:* plans and elevations supplied by the client in PDF format, formed the basis for the drawn record, and were checked for accuracy before being enhanced with pertinent detail and annotation. The final plans were created within an industry-standard CAD package (Autocad 2016), enhanced and annotated to show the form and location of all architecturally and historically significant features.

1.4.5 *Photographic Record:* a Canon EOS 2000D digital SLR (24 megapixel) camera, with a selection of lenses, was used for the photographic record. The record comprises landscape and detailed photography; the detailed photographs of archaeological features incorporated a scale bar where appropriate. Archive photographic locations are presented on the relevant plots (Fig 4). Archival images comprise jpgs and Canon RAW format files (cr2) saved as 8-bit TIFFs. The data are stored on two separate servers on different sites, with appropriate back-up and disaster plans in place.

1.4.6 *Archive:* a full professional archive has been compiled in accordance with current CIfA (2020b) and Historic England guidelines (2015). The paper and digital archive will be deposited with the West Yorkshire Historic Environment Record (HER) on completion of the project.

2 BACKGROUND HISTORY

2.1 Introduction

2.1.1 The following section offers a brief historical overview of the Transpennine Route between Huddersfield and Westtown drawing upon readily available historical sources to provide context for the development of the railway in this area. It is accompanied by an historical overview of Huddersfield Station alongside an historic map regression showing the development of the station and the development of Huddersfield more generally, placing it within its wider historical context.

2.1.2 A detailed historical background of the Transpennine Route and Huddersfield Railway Station was produced in the Heritage Assessment (Network Rail 2021) and repeated in the WSI (*Appendix A*), and has been reproduced, in part, in the below sections, for the purposes of this report.

2.2 General Historical Background

2.2.1 The Transpennine Route between Huddersfield and Westtown (Dewsbury) was constructed and opened between 1836 and 1849 (Network Rail 2021). The route today comprises sections of rail-line development by different railway companies, characteristic of the wider Transpennine Route between York, Selby and Manchester (*ibid*).

2.2.2 The complex chain of companies and projects is a typical product of the 'Railway Mania' of the mid-1840s, the height of a period of commercial confidence and expansion in the railways (Baxter 2019, 14). The line formed a new, more direct route to the West Riding from Manchester, in competition to the earlier Manchester & Leeds Railway which had been constructed through the Calder Valley in the late 1830s (Network Rail 2021). The more direct route was enabled partly through the advances in tunnel construction and large-scale engineering technology, notably realised through the construction of the 3-mile Standedge Tunnel under the Pennine watershed to connect the line between the Upper Tame and Colne Valleys (*ibid*). The Stalybridge to Leeds line was a product of that trend (*ibid*).

2.2.3 The development and expansion of the railways and their associated infrastructure during the first half of the nineteenth century, had a huge influence on those towns linked by this new mode of transport (Network Rail 2021). The railway resulted in place-making and industrial growth, as towns benefited from the connections and influences which they brought with them (*ibid*). The Transpennine Route between Huddersfield and Westtown (Dewsbury) certainly had an influence on towns, forming an additional infrastructure element of the expansion of settlements such as Huddersfield already underway as a result of the growth of textile, mining and malting industries (*ibid*). A prime example of this is seen through Huddersfield Station and its associated goods yard to the north-west (*ibid*).

2.3 Specific Historical Background

2.3.1 Huddersfield Station was designed by architect James Pigott (J. P.) Pritchett (1789-1868) and constructed between 1846 to 1850 following a commission by Earl Fitzwilliam of Wentworth (Network Rail 2021). The station originated as a product of the joint enterprise of two railway companies: the Huddersfield & Manchester Railway (which amalgamated into the LNWR) and the Lancashire & Yorkshire Railway (*ibid*). This agreement enabled the companies to build a railway station of unprecedented scale, resulting in Huddersfield Station having one of the finest facades in Britain (*ibid*) (Plate 1). Its design was reminiscent of a Palladian country house with a long neo-classical façade consisting of a central portico with eight Corinthian columns flanked by two, symmetrical, single-storey colonnades that ended in small matching pavilions (*ibid*; York Civic Trust referenced in Network Rail 2021). The main station building was two-storeys tall and contained elaborate refreshment rooms, which functioned until at least 1883, with the two wings containing duplicate booking offices, uniformly divided waiting rooms, parcel offices and staff accommodation for both companies (*ibid*).

Plate 1: Huddersfield Station and St George's Square, 1890s (Yorkshire Live 2023)

2.3.2 To the rear of the principal façade, the station contained a single platform spanned by a simple composite pitched iron roof which sat on a row of columns on the far side of the tracks with a further colonnade on the edge of the platform (Network Rail 2021). The original railway layout consisted of a platform road and a through line with a scissors crossing enabling trains from either direction to arrive at the single platform (*ibid*). The operation of the station was shared between the two railway companies with both having individual goods warehouses (*ibid*). The station remained under joint

operation until the merging of the two railways into the London Midland & Scottish Railway (LMS) in 1922 (*ibid*, 18).

2.3.3 By the 1860s, station facilities became less fit for purpose with the increase in usage and limited capacity of the single platform causing considerable problems (Network Rail 2021). By the 1870s, the arrival of bigger locomotives and longer carriages made the old track obsolete, and it became necessary to enlarge the station platforms (*ibid*). A programme of station enlargement conducted during the 1880s was completed by 1886, extending the station with the addition of an island platform connected via a subway link (*ibid*). The station now comprised three through-platforms and five bays for local and terminating services (*ibid*). A new, wider roof covered the new and extended platforms and consisted of two spans, comprising a series of wrought iron pitched trusses, supported on longitudinal beams and columns, originally with a raised roof lantern along the top of both pitches (*ibid*) (Plate 2). The roof represented an example of an iron-trussed pitched roof trainshed, an approach which had been pioneered by the London & Birmingham Railway at Euston in 1837 and is consequently referred to as the 'Euston Roof' (*ibid*) (Plate 3 & 4). This approach was common to several stations during the nineteenth century, particularly those of the LNWR (*ibid*). Defects in the roof's design, centred around its structural instability, contributed to its collapse during construction in 1885, killing four men (*ibid*). An improved structural design by Joseph Butler & Co. of the Stanningley Ironworks saw the roof finally completed in 1886 (*ibid*).

Plate 2: Trainshed roofs under construction, 1886 (Network Rail 2021)

Plate 3: Huddersfield Station in the early twentieth century (source Historic England)

Plate 4: Huddersfield Station, 1954, facing north (source Yorkshire Live 2023)

2.3.4 The Station underwent numerous changes from the 1890s to the twenty-first century, but the majority of the major elements are largely unchanged from

the period of expansion in the 1880s (*ibid*). The most notable changes include the removal of Roof A's lantern prior to 1954 (Plate 4), and the shortening of the roofs at the northern end sometime during the late twentieth century.

2.4 Map Regression

2.4.1 The earliest map to depict Huddersfield Station (NHLE 12277385) is the first edition Ordnance Survey (OS) map of 1851 (surveyed 1848) (Plate 5). The main station building is located on the eastern side of a series of tracks named the '*London and North Western Railway (Huddersfield and Manchester Section)*' on an alignment of north-east to south-west. The original pitched roof canopy with a central lantern is shown attached to the rear (western) edge of the station building spanning the length of the single platform and extending beyond the station building to the north. Along the entire western edge of the roof a series of evenly-spaced circular columns are depicted. The original roof's presence on this map shows that it dates from at least 1848.

Plate 5: Excerpt of 1:10,560 OS map of Huddersfield Sheet 5 (Surveyed: 1848, Published: 1851)

2.4.2 To the west of the station the original layout of the associated goods yard is depicted with the London and North Western Goods Department building immediately to the west (with a cattle platform to the rear), and the Lancashire and Yorkshire Goods Department building to the south-west. Both occupy the area in which the later extant Large Brick Warehouse (NHLE 1228533) and the extension of rail tracks and sidings are located. To the north, a Railway Coal Depot occupies the site of the current sandstone retaining wall and the former goods yard storage building (see OA 2023), with the Huddersfield Viaduct (NHLE 1223531) depicted to the north-east. To the west, the area is yet to be developed as Fitzwilliam Street is not yet depicted. To the

east, beyond the principal station building, St George's Square and its surrounding buildings are yet to be developed, as only The George Hotel and a series of walkways and gardens are present.

2.4.3 Later historic OS mapping surveyed in the late 1880s shows significant changes to the station following the programme of enlargement (completed in 1886). The OS map of 1893 (surveyed 1887 to 1889) shows an increased network of tracks and sidings with modifications made to the main station building (Plate 6). The station is shown to have been expanded to the south with the addition of a structure extending from the southern pavilion. To the north, three structures are now present detached from the northern pavilion and in line with the northern edge of the canopy roof. To the west, attached to the rear of the main station building, the original pitched canopy roof has been replaced by two much larger canopy roofs (Roofs A and B) which span a series of through tracks and platforms, including the newly constructed island platform (although not visible). It is unclear however, whether Roof C is depicted attached to the western side of Roof B by this time, but, as the far western platform (known today as Platform 8) appears to be covered by the trainshed roof, then it is reasonable to suggest that Roof C was present at this time. Attached to the south-western corner of Roof A, a rectangular structure aligned north-west/south-east located above the tracks is a signal box. To the south, a separate canopy roof (although attached) is shown to span the platform known today as the Penistone Line platform, where a series of tracks are shown to terminate (Network Rail 2021). To the north, a separate row of buildings facing track sidings and a turntable are present in the area behind the George Hotel.

Plate 6: Excerpt of 1:2500 OS map of Yorkshire CCXLVI.15 (Surveyed: 1887 to 1889, Published 1893)

2.4.4 The OS map of 1890 (surveyed 1889) provides enhanced detail beneath the canopy roofs (roofline represented by a dashed line) depicting station elements developed as a result of the station's expansion. The original single platform has been extended to the north and south beyond the length of the station building with the newly-built island platform visible opposite shown to service both through and terminating train traffic. The presence of newly-built structures includes the Waiting Rooms (known today as the Tea Rooms) located at the northern end of the island platform, and the subway link, connecting the island platform to the main station platform. Additional detail within the main station building shows it consisted of booking offices, waiting rooms, offices and a refreshment room. To the north, a row of three structures sited against the northern platform are shown to be offices and to the north of these behind the George Hotel, a separate row of buildings with tracks and a turntable to the front are also shown to be offices. To the south, newly-constructed station structures are attached to the southern pavilion extending southwards with the roof canopy attached against the rear western elevation (Plate 7).

Plate 7: Excerpt of 1:500 OS map of Yorkshire CCXLVI.15.8 (Surveyed: 1889, Published 1890)

2.4.5 To the west, significant changes to the layout and infrastructure of the goods yard is evident with the installation of a large network of tracks and sidings and newly-erected structures. The original London and North Western Goods Department building has been replaced by a much larger structure named the L. & N. W. R. Goods Shed, containing four internal platforms with four terminating tracks, an external loading bay with a lift over a single track and a series of turntable and cranes along its northern edge. Known today as the Large Brick Warehouse (NHLE 1228533) constructed *c* 1878 and 1883 (Historic England 2023). To the south-west, the original Lancashire and Yorkshire Goods Department building has been replaced by the L. & Y. R. Goods Shed and contains two internal platforms and two through-tracks (known today as the Stone Warehouse (NHLE 1287149) constructed *c* 1878 and 1883 (Historic England)). To the north, the Railway Coal Depot has been replaced by smaller

ancillary structures (the rectangular structure in the northern corner possibly an early footprint of the Former Goods Storage Yard Building, see OA 2023), and the widening of the track network. Immediately to the north-east, the Viaduct (NHLE 1223531) has been visibly widened in order to accommodate the increased capacity of track. Attached to the first span of the viaduct, the retaining wall is now present forming the northern boundary of the goods yards. Located within the retaining wall at the north-western corner, a rectangular structure on a north-east/south-west alignment is likely that of the north-west Tower (NHLE 1289593) constructed *c* 1878 (Historic England 2023).

2.4.6 The expansion of the station and the goods yard is reflected in the expansion of Huddersfield more widely in the second half of the nineteenth century with the development of the town. To the north, Fitzwilliam Street is now present providing access into the goods yard via a northern entrance (Historic England 1996), with the development of numerous buildings present along its northern edge. Development is also visible to the east along the eastern edge of John William Street, with the addition of several buildings. To the east of the principal station building, immediately at its front, St George's square has now been developed with a central statue of Sir Robert Peel, unveiled in June 1873 to a crowd of 40,000 people (Huddersfield Exposed 2018), and a network of tram tracks passing through its eastern edge. Bordering the Square at its eastern and southern edge, the Lion Buildings (NHLE 1134167) and the Britannia Buildings (NHLE 1232119) are now present with the George Hotel on the northern side.

2.4.7 The OS map of 1907 (revised 1905) shows no change to the station layout or the form of the station roof with the only exception being the canopy roofs are depicted as glass structures (Plate 8). To the west, a small number of changes have taken place in the goods yard with the removal of three structures in the northern corner, being replaced by a rectangular storage building constructed into the northern and eastern sections of the retaining wall (OA 2023), and a larger, rectangular office building immediately to the west, also constructed into the northern section of the retaining wall (Network Rail 2023). To the south, a small section of wall aligned north-east-to-south-west associated with the viaduct has disappeared. Three smaller square buildings near the northern entrance have been removed and the L. & N. W. R. Goods Shed and the L. & Y. R. Goods Shed to the west and south-west of the station are now both labelled as 'Goods Shed'. The following OS mapping throughout the first half of the twentieth century show no further changes to the station or the associated goods yard.

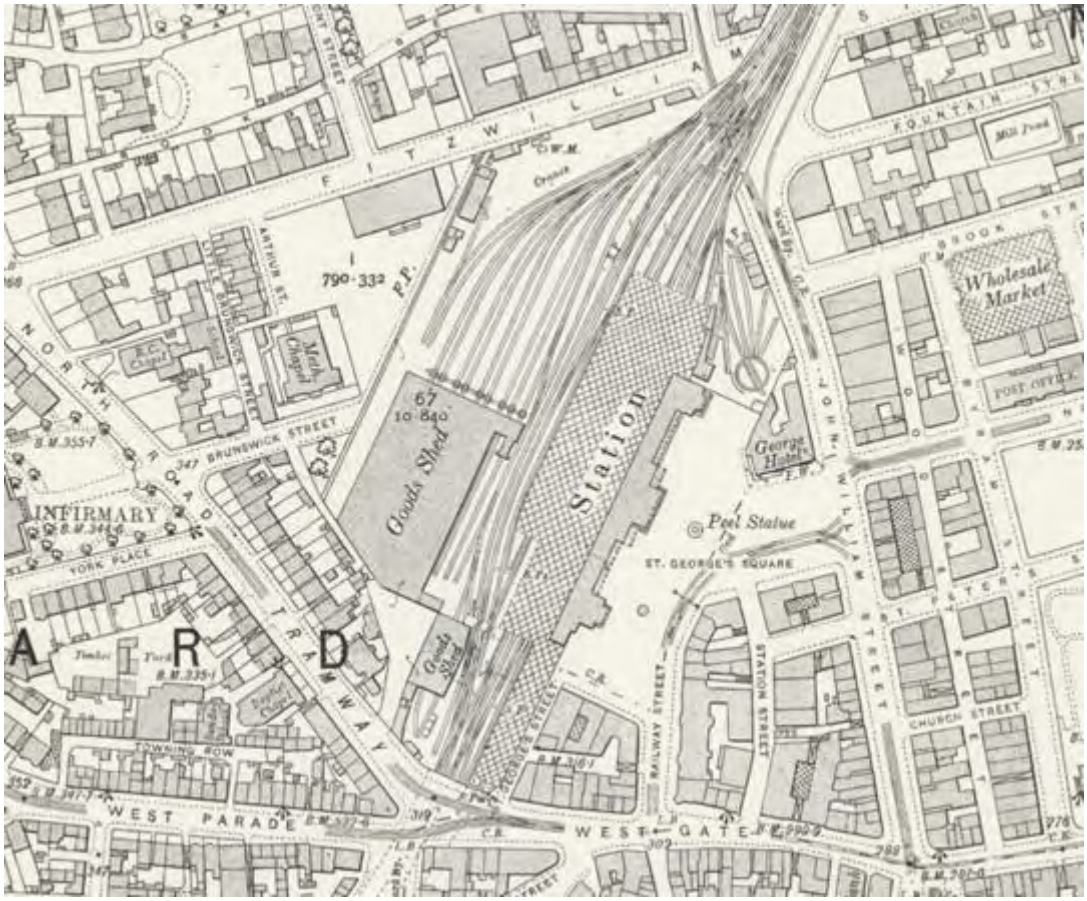


Plate 8: Excerpt of 1:2500 OS map of Yorkshire CCXLVI.15 (Revised: 1905, Published 1907)

2.4.8 Although no further historic OS mapping was available post 1966 (surveyed / revised 1958 to 1963), the use of Google Earth (2023) showed the northern ends of Roof A, B and possibly C had been shortened in length by approximately 25m sometime after 1963. In addition, changes have been made to the network of tracks with the track terminating at the southern end of Roof B having been removed along with a number of tracks in the adjacent goods yard also having been removed.

3 OUTLINE DESCRIPTION

3.1 Introduction

3.1.1 Huddersfield Station (NHLE 1277385) and its attached rear trainshed roofs (A, B and C, west of the principal station building) are on a true alignment of north-east/south-west, but for the purposes of description, this has been simplified to north/south. When reference is made to the northern/southern ends of the roof structures, descriptions may also refer to the *'Leeds end'* (north) and *'Manchester end'* (south). Roofs A and B were two wrought iron pitched trussed trainshed roofs and are rare surviving examples of 'Euston Roofs' (*Section 2.3.3*), with Roof C, a cantilever canopy connected to the western side of Roof B (*Appendix A*; Plate 9).

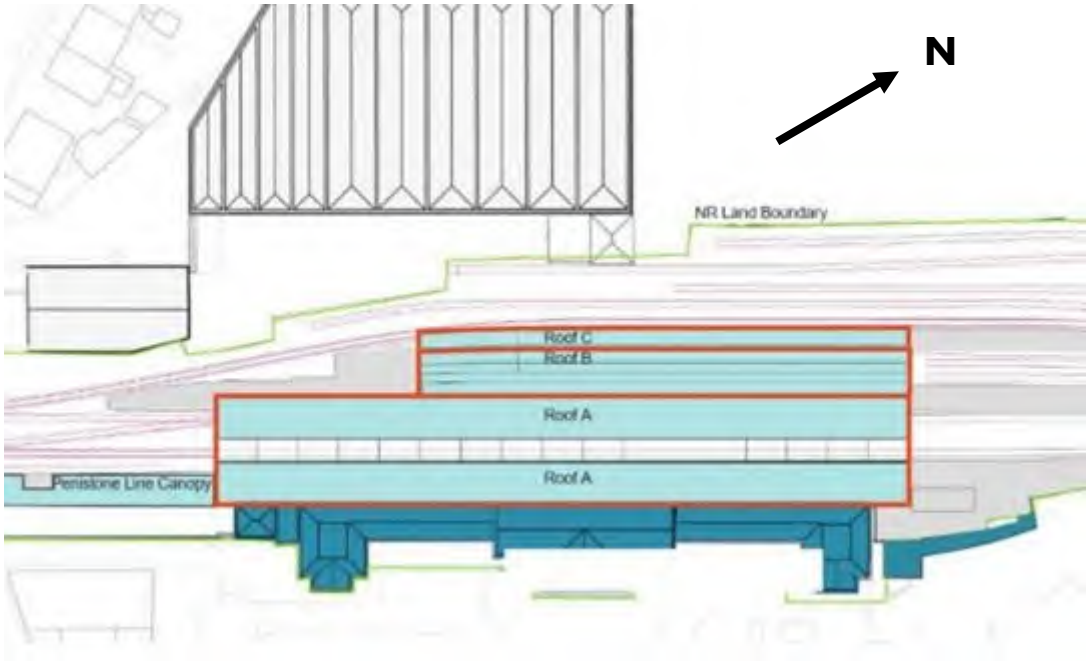


Plate 9: Plan view of Roofs A, B and C (Appendix A)

3.1.2 The following section will outline the external and internal appearance of the roof to be retained (the majority of Roof A) and the roofs to be removed (Roofs B, C and the Manchester end of Roof A, bays 1 & 2, Fig 4) (*Appendix A*). It is important to note that limited access to the upper roof exteriors prevented a full observation of their external appearance and so, descriptions will be made based upon what was observed during the site visit (October 2023) and with the support of Google Earth and existing photographic evidence of the structure.

3.2 Roof A

3.2.1 Roof A was rectangular in form and the largest of the two pitched trussed roofs, measuring approximately 24m in width and 153m in length. The structure spanned platforms 1 and 4 and was open at the Leeds and Manchester ends and, also open at the southern end of the western elevation

with the remainder of its western side contained within the structure of Roof B. The roof canopy was supported on its western side by a row of 18 columns located along the length of the Island Platform with its eastern side attached to the rear (western) side of the main station buildings. Above, its roof was topped with grey slate and a translucent corrugated fibre sheeting, with a vacant space in the centre marking the position of a former roof lantern that once spanned its length. Structural surveys as part of the TRU programme identified the overall condition of Roof A as fair, with evidence of some corrosion on individual members at either end of the roof (Network Rail, 2021).

External Descriptions

Northern elevation (Leeds end):

3.2.2 The northern elevation showed the open northern gable end of Roof A with its double pitched truss roof spanning Platform 1 of the main station on the eastern side, and Platform 4 of the Island Platform on the western side, where it connected to the eastern side of Roof B (Plate 10 & 11). On the upper section beneath the canopy, the wrought iron truss and its components of joists, struts and tie rods were interlocked with joint plates, rivets and bolts which spanned the roofs width (Plate 12 & 13). In the centre, a decorated moulded roundel (also known as a 'rose' connection) with fleur-de-lis decoration was present at the intersection of cross-bracing members (Plate 14 & 15). This structural form and decoration was repeated throughout the length of the roof. Attached at either corner of the central cross brace were two, possibly later, iron join plates over the original connection plate with two wrought iron supporting brackets connected to the second internal truss (Plate 13), these may have been installed following the removal of the northern section of the roof in the later twentieth century (*Section 4.4.3*). Above this, a central gap with a top cross beam highlighted the former location of the roof lantern which, based upon historic photography (Plate 2 & 3), would have been of a similar design to the adjacent extant lantern of Roof B.

Plate 10: Northern gable end of Roof A (left) with attached Roof B (right), Roof C cantilevered off the edge of Roof B (far right) and the Large Brick Warehouse NHLE 1228533 (background far right), facing south-west

Plate 11: Northern gable end of Roof A, facing south-east

Plate 12: Western end of Roof A showing joist, struts and tie rod interlocked with joint plates and rivets

Plate 13: Example of a later join plate attached over an original connection plate at the western end of the northern truss

Plate 14: Central cross brace with moulded roundel (or 'rose' connection) and space above marking the location of the former roof lantern

Plate 15: Close up of moulded roundel with fleur-de-lis decoration

3.2.3 Surface corrosion was visible on all of the iron elements as its open sides and top were exposed to the weather. Attached to the northern face of both rafters were two strips of the corrugated metal cladding. Beneath the truss at both the eastern and western corners of the canopy the roof was supported by two compound-riveted wrought iron columns with incorporated down-pipes, bell-shaped foot detailing and a horizontal cap plate beneath the longitudinal truss, with the upper section contained within the depth of the truss (Plate 11). Attached to the upper section of the eastern column, lattice girders connected to the upper western elevation of an ashlar sandstone wall of a structure attached to a row of former offices (Plate 16).

Plate 16: Eastern corner of Roof A on top of a cast iron support

3.2.4 Historic mapping showed that this was not the original northern elevation as modifications sometime during the later half of the twentieth century saw the northern end reduced in length by approximately 25m. There was no clear evidence of this change observed, however, during the site visit, except for the later iron plates and brackets (*Section 4.2.2*).

Eastern Elevation

3.2.5 The majority of the external eastern elevation (not including the above pitched roof) comprised a low-rise ashlar sandstone wall, with coping stone top, above the roof line of the northern and southern wings of the station with the central section incorporated into the rear (western) elevation of the principal station building (Plate 17). The sandstone wall at the southern end extended beyond the southern pavilion and attached southern structures, with historic mapping showing it to likely have been constructed during the

expansion of the station in the 1880s. The only exposed external elevation beneath the line of the canopy was an open section at the northern end where the roof extended beyond the northern pavilion of the station building. At the far northern end the roof was held up by the same wrought iron column as that described on the northern elevation. Attached to the upper section, lattice girders connected to the northern elevation of the northern pavilion with three separate lattice girders connected to the western elevation of an ashlar sandstone wall, again, likely constructed in the 1880s.

Plate 17: Sandstone wall visible at southern end of eastern elevation (right), facing north-west

3.2.6 Access to the top floor of the principal station building enabled observations from a central position of the eastern pitched roof (Plates 18, 19 & 20). Facing both north and south, the appearance of the roof's exterior showed it to be attached to the length of the station building (and raised wall at the southern end) and have grey slate running the length of its lower and upper sections with translucent corrugated fibre sheeting running through the centre. The current ridge line marked the top of the roof but historic photography showed the eastern elevation of the former central lantern was once raised above this line, having lattice girders running the length of the roof with a double-pitched translucent structure above (Plate 3).

Plate 18: Central section of Roof A with eastern elevation of the Large Brick Warehouse (NHLE 1228533) behind, facing west

Plate 19: Roof A attached to the rear (western) elevation of the principal Huddersfield Station building (NHLE 1277385) (right), facing north

Plate 20: Roof A attached to the rear (western) elevation of the Huddersfield Station and southern wing (NHLE 1277385) (left) with the Large Brick Warehouse (NHLE 1228533) (right) and the Stone Warehouse (NHLE 1287149) (centre)

Southern Elevation (Manchester end)

3.2.7 The southern gable end of Roof A was subject to Level 3 Historic Building Recording due to it being scheduled for demolition (bays 1 & 2) (Plate 21). Its form was almost identical to that of the northern gable end, except its rafter tie components appeared to be tubular and curve upwards in the centre. Its width spanned Platform 1 of the main station on the eastern side and Platform 4 of the Island Platform on the western side. Beneath the canopy the components of the wrought iron truss were visible with a moulded roundel, again with a fleur-de-lis decoration, located in the centre at the intersection of cross-bracing members (Plate 22). Above this was another cross beam and a gap where the former roof lantern would have been located. The condition of the truss was slightly worse than at the northern gable end with a greater amount of surface corrosion present on the iron components. Attached to the southern face of both rafters were two strips of corrugated metal cladding.

Plate 21: Southern end of Roof A with Roof B and Roof C (far left), Huddersfield Station (NHLE 1277385) (right) and Penistone Line canopy (bottom-right), facing north

Plate 22: Central cross brace with elaborate central moulded roundel with the space above marking the location of the former roof lantern, facing north-east

3.2.8 The southern gable end was supported on its western side by a compound-riveted column displaying on its upper section chamfered edges and

panelling beneath a wrought iron eaves trough. (Plate 23). At the eastern end, the roof was attached to the western elevation of the ashlar sandstone wall with coping stone top that extended beyond a southern structure to the south of the southern pavilion (Plate 24). Attached to its southern elevation was the Penistone Line canopy which protruded to the south.

Plate 23: Western column with eaves trough above (centre-left) with the same present on the western side of Roof B (left)

Plate 24: Eastern end of truss attached to the western elevation of the sandstone wall (far right) with the Penistone Line canopy attached (bottom right) and Huddersfield Station (NHLE 1277385), facing north-east

3.2.9 At the western end there was no evidence of the former signal box which is shown on historic OS mapping to have once been attached to the south-western corner after the station's expansion in the 1880s.

Western Elevation

3.2.10 The majority of the western elevation was contained within the interior of the attached Roof B, with the only exposed external section located at the southern end of the Island Platform (Plate 25). This exposed section contained five compound-riveted wrought iron columns, each with incorporated down-pipes and the bell bottom bases. The two most southerly bays at this end of the roof were to be removed as part of the TRU programme of works. Between each column and spanning the length of the roof were a series of lattice beams consisting of a deep Howe-truss with a smaller truss above (Network Rail Heritage Statement 2023, 23).

Plate 25: Lower external western elevation (far left) with western pitched roof above, facing north-east

3.2.11 The western elevation of the pitched roof showed it to be the same as the eastern pitch with grey slate running the length of its lower and upper section with translucent corrugated fibre sheeting running through the centre (Plate 26). Above, the current ridgeline marked the base of the former roof lantern. At the base of the canopy was the eaves trough shared with Roof B, which sat on top of an iron girder above the small Howe-truss running across its length. Attached at the centre/southern end and the northern end was the eastern edge of Roof B.

Plate 26: Western pitched roof of Roof A with Roof B attached (left), facing north

Internal Descriptions

3.2.12 Both the internal northern elevation (Leeds end) and southern elevation (Manchester end) correspond with their external descriptions and so will not be repeated in this section. What will be presented, however, are the internal descriptions of the eastern and western elevations and a description of the underside of the roofs central structure. When describing the direction of the internal elevations they will correspond with the direction of the exterior elevation.

Eastern Elevation

3.2.13 The eastern elevation of Roof A comprised the rear (western) elevation of the station buildings and, as such, descriptions will only focus on those structural elements associated with the roof (Plate 27, 28 & 29).

Plate 27: Northern end of eastern elevation (rear (western) elevation of the station buildings), facing north-east

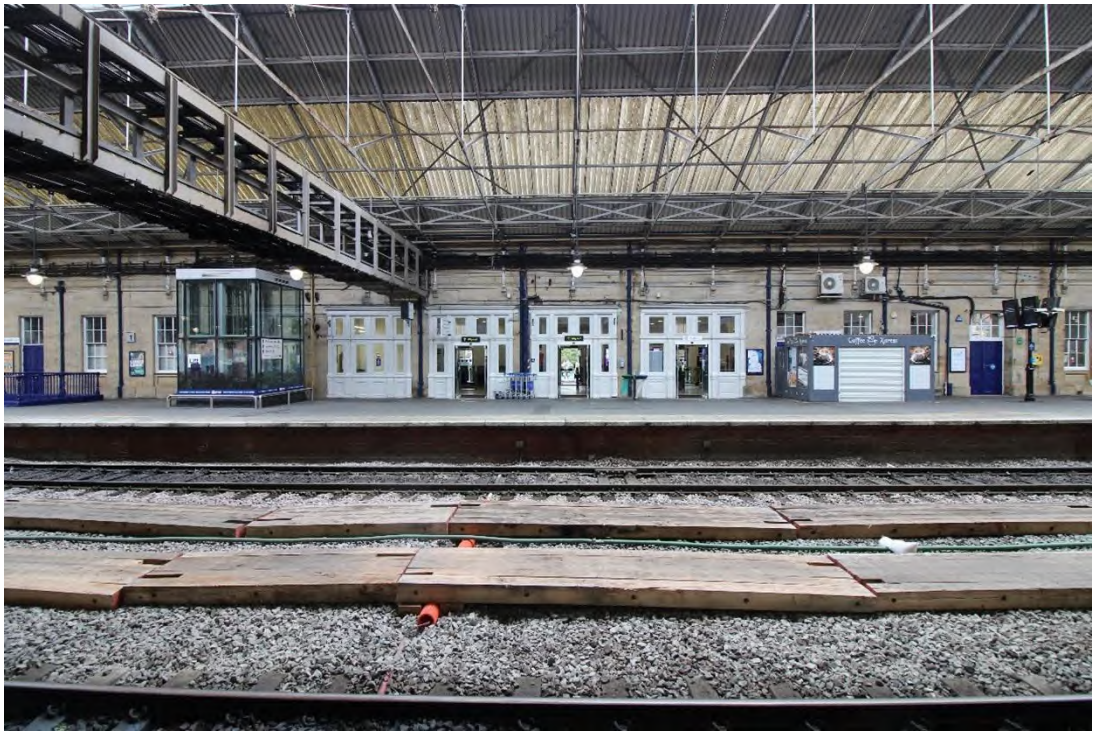


Plate 28: Central section of eastern elevation (western elevation of station), facing east

Plate 29: Southern end of eastern elevation (western elevation of station), facing south-east)

3.2.14 Spanning the length of the upper section of the eastern elevation was a series of evenly-spaced cast iron structural supports with the eastern ends of each individual roof truss attached above with the trusses appearing to be embedded into the eastern ashlar sandstone wall (Plate 30). Each of the supports were inset into the sandstone wall on top of a decorated floral corbel and had the appearance of a fluted column with scrolled base (Plate 31). Although undetermined, they were likely part of the later phase of station expansion in the 1880s as they extended above what appeared to be the original roof line of the northern and southern wings of the station building. Each were inset into two decorated string courses that ran the length of the elevation with the northern and southern ends attached to an ashlar course wall above both wings. At the southern end of the elevation, a wall join was visible with a structural extension butted against the southern edge of the southern pavilion (*Section 4.4.4*; Plate 32).

Plate 30: Structural supports with trusses attached above

Plate 31: Example of two structural supports attached to the eastern elevation

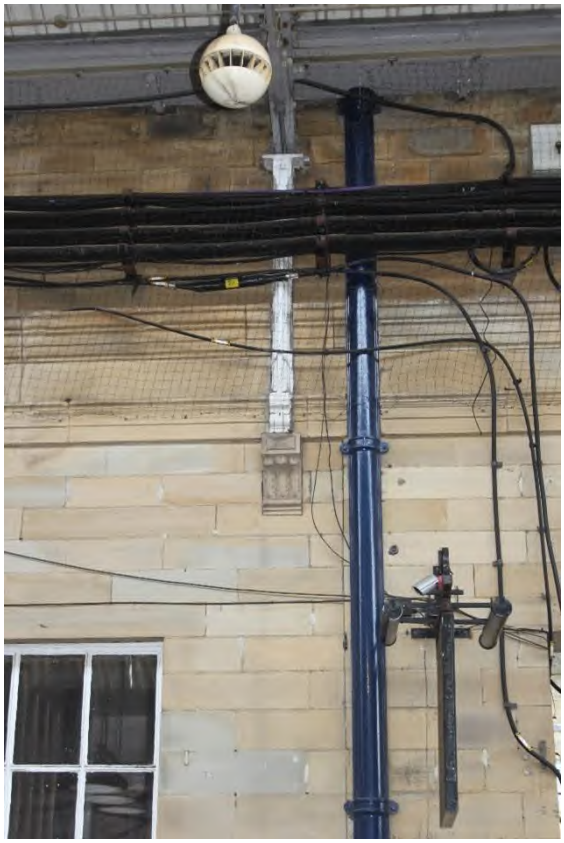


Plate 32: Wall join at the southern end of the eastern elevation (left of down-pipe), facing east

3.2.15 A series of down-pipes connected to the roof spanned the length of the eastern elevation and descended to the platform level. In the centre beneath the roof, an iron cable bridge extended westwards across to the Island Platform (Plate 28). At the far northern end, the roof extended beyond the station building and was supported by the same compound-riveted wrought iron column as described in the northern exterior elevation.

3.2.16 Above the top of the wall line was the underside of the canopy roof with the underside of the upper and lower sections of grey slate covered by corrugated metal sheeting and the translucent corrugated fibre sheeting present through the centre providing daylight into the platform area. Beneath the line of the fibre sheeting, longitudinal lattice bracing extended the length of the roof.

Western elevation

3.2.17 The western elevation comprised a row of 18 columns along the length of the Island Platform that supported the western pitched roof of Roof A (interior) and the eastern pitched roof of Roof B (exterior) (Plate 33, 34 & 35). Sixteen of the columns were of compound-riveted wrought iron construction with five at the southern end forming part of the roof's open structure (the two most southerly bays 1 & 2 were to be removed as part of the TRU programme of works) (Plate 35).

Plate 33: Northern end of western elevation with the eastern elevation of the 'Tea Rooms' located at the northern end of the island platform, facing north-west

Plate 34: Central section of western elevation facing north-west

Plate 35: Southern end of western elevation

3.2.18 Each of the wrought iron columns had incorporated down-pipes, bell-shaped foot detailing and a horizontal plate beneath the longitudinal truss, with the upper section contained within the depth of the truss (Plate 36 & 37). Located at the centre-northern end were two cast iron Corinthian columns with decorated capitals and bases, the base having decorative fleur-de-lis emblems, supporting the structure of Roofs A and B (Plates 38, 39 & 40). Both were distinct in comparison to the wrought iron columns, but it was not clear whether they were constructed as part of the same phase of development or whether they were architectural features that survived the collapse of the initial roof in 1885 (Network Rail Heritage Statement 2023, 23). Unlike the compound-riveted columns, which were evenly spaced apart, the two cast iron columns had a wider gap between them, possibly a design decision so as to avoid placing a column directly over the buried subway beneath (*ibid*).

Plate 36: Example of a compound-riveted wrought iron column with 2m scale, facing south

Plate 37: Bell-shaped foot detailing at the base of a compound-riveted wrought iron column with 0.5m scale

Plate 38: One of the two decorative cast iron columns with 2m scale, facing south

Plate 39: Decorative capital of cast iron capital

Plate 40: Decorative base of cast iron column with 0.5m scale

3.2.19 The method by which the 16 wrought iron columns were connected to the roof suggest they were contemporary and likely part of the roof's construction in 1886 (*ibid*). Spanning between each wrought iron column and above the two cast iron columns were lattice beams consisting of a deep Howe-truss with a smaller Howe truss above (*ibid*). Each of the wrought iron columns and a northern cast iron column, had attached station fixtures and fittings including station signage, platform numbers and at the southern end, industrial lighting. In the centre of the western elevation was the cable bridge connected to the main station building.

3.2.20 Above the line of the smaller Howe-truss were the attached western corners of the roof trusses and above these was the underside of the canopy roof. Its form was the same as that described for the eastern elevation with the underside of the upper and lower sections of grey slate covered by corrugated metal sheeting and the translucent corrugated fibre sheeting present through the centre (Plates 33, 34 &, 35). Beneath the line of the fibre sheeting, longitudinal lattice bracing extended the length of the roof.

Central Roof Structure (internal)

3.2.21 The central roof structure of Roof A was dominated by the wrought iron trusses which spanned its width and ran along its length. The open gap above, spanned by cross beams connecting the eastern and western pitched roofs, marked the location of the former lantern light (Plate 41). The wrought iron trusses were uniform in design, with central cross-bracing and decorative roundels. They were almost identical in appearance expect for four trusses at the southern end (Manchester end), which had tubular rafter tie components

instead of squared bar rafter ties (Plate 42). Also at the southern end, between the gable truss and the first internal truss, five cross-bracing members with decorative moulded fleur-de-lis roundels were laid perpendicular to the upright central cross-bracing members which spanned the length of the roof structure (Plate 43). These provided support and stability to the southern end of the structure but were not present at the northern end (Manchester end). In both cases, the tubular rafter tie components and the perpendicular cross-bracing were to be removed as part of the TRU programme of works as they were contained within the two most southerly bays (1 & 2).

Plate 41: View of underside of Roof A, facing north

Plate 42: Manchester end of Roof A with tubular rafter ties and decorative moulded fleur-de-lis roundels laid perpendicular to the upright central cross braces

Plate 43: Close up of decorative moulded fleur-de-lis roundel and cross brace

3.2.22 In addition to Roof A's structural form, pendant industrial lighting was attached to the western side of the roof trusses which ran the length of the Roof A (Plate 44).

Plate 44: Pendent industrial lighting attached to the western side of the roof trusses

3.3 Roof B

3.3.1 Roof B was rectangular in form and the smaller of the two pitched trussed trainshed roofs, measuring a span of approximately 12m and a length of 110m. It was attached to Roof A and supported by 13 of the same columns on its eastern side and 14 columns on its western side. It spanned platforms 4 and 8, and had attached to its western edge, the cantilevered Roof C that extended over Platform 8. The roof was of a similar construction as Roof A, with wrought iron trusses spanning its width, topped with corrugated metal sheeting and translucent corrugated fibre sheeting. Running along its length it retained its raised roof lantern.

External Descriptions

Northern elevation

3.3.2 The northern elevation showed the northern gable end of Roof B with its wrought iron truss spanning Platform 4 on the eastern side and Platform 8 on the western side (Plate 45). Its construction was identical to that of the northern gable of Roof A with the same interlocking joists, struts, tie rods and a central moulded roundel, with fleur-de-lis decoration at the intersection of cross-bracing members (Plate 46). Attached at either corner of the central cross brace were two, possibly later, iron plates covering the original connecting plate, with two wrought iron supporting brackets connected to the second truss (Plate 47). Above the central cross brace was a rounded wrought iron arch with two small circular elements and a pointed arch above,

interlocked with joint plates and rivets that formed the northern gable end of the raised roof lantern (Plate 46). Above this and along the roofline of the pitched roof, the face of the rafters were covered by strips of corrugated metal cladding. At the eastern end was the attached Roof A and on the western side was the attached cantilevered Roof C. Beneath these, at both the eastern and western ends, the roof was supported on compound-riveted wrought iron columns with incorporated downpipes and bell-shaped foot detailing (Plate 48).

Plate 45: Northern gable end of Roof B with attached Roof A (left) and Roof C (right) and Tea Rooms (centre-right), facing south-east

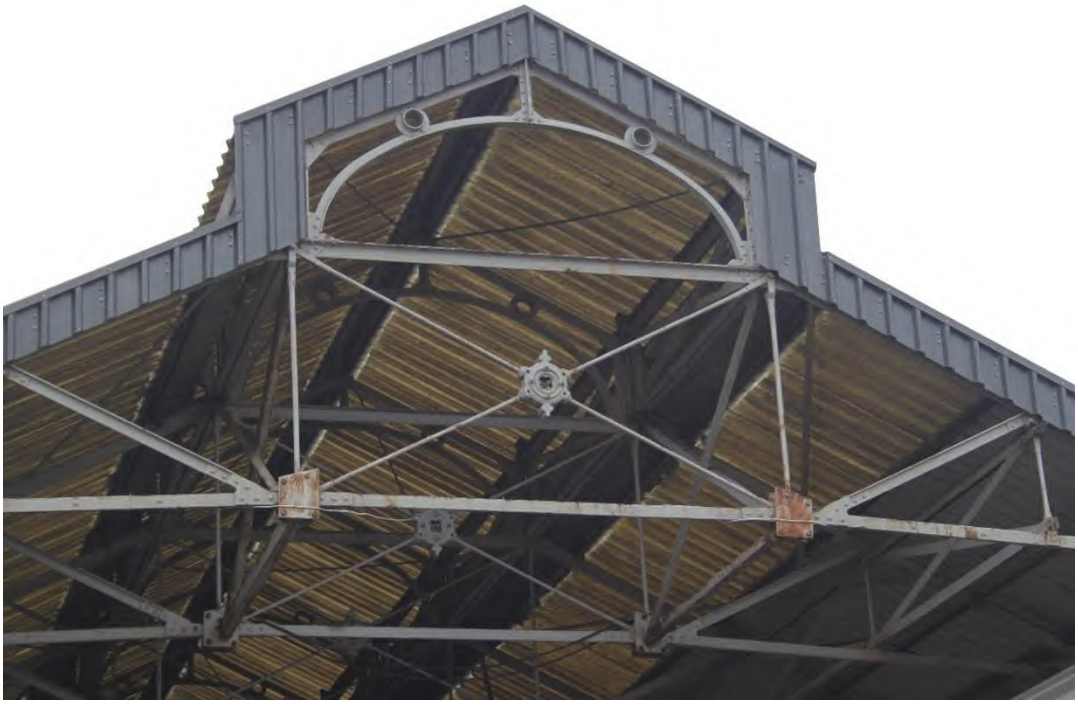


Plate 46: Northern gable end of central cross bracing members and raised roof lantern above

Plate 47: A later supporting bracket located at the western corner of the central cross brace

Plate 48: Northern gable end of Roof B with wrought iron column supports, facing west

Eastern Elevation

3.3.3 The lower external eastern elevation comprised the majority of the internal western elevation of Roof A and showed Roof B to be supported on 11 of the compound-riveted wrought iron columns and the two decorated cast iron columns located at the centre-northern end. For further descriptions of the eastern exterior please refer the internal western elevation descriptions of Roof A (*Section 3.2.15 – 3.2.17*, including Plates 33, 34 & 35).

3.3.4 Beneath the bottom edge of the roof canopy was the eaves trough shared by Roof A and Roof B. Above this, the pitched roof was topped with grey corrugated metal sheeting across the lower and upper section with translucent corrugated fibre sheeting across the centre (Plate 49). Where the upper section of the pitched roof met the raised roof lantern, two rows of sheet metal created longitudinal ventilation slats, with the eastern-pitched roof of the lantern covered by translucent corrugated fibre sheeting (Plate 50).

Plate 49: Eastern pitched roof of Roof B (centre) with eastern pitch of roof lantern above (centre-left) and Roof A attached (right), facing north

Plate 50: Northern corner of eastern elevation showing longitudinal slats and translucent corrugated fibre pitched roof of lantern with attached western corner of Roof A (centre-left), facing south-west

Western elevation

3.3.5 The lower external western elevation comprised 14 supporting compound-riveted wrought iron columns, each with incorporated down-pipes, that were evenly space along the roofs length (Plate 51 & 52). Attached to the majority of the columns were station fixtures and fittings including signage, platform numbers and on the upper section industrial lighting. The girders which spanned the columns were composite lattice beams with exposed rivets consisting, in places, of a deep Howe-truss, some appearing to be of a slightly different construction displaying thin lattice beams, with small trusses above. Attached to the vertical beams of the larger lattice trusses were the supporting roof brackets of the cantilevered Roof C protruding to the west (Plate 53).

Plate 51: Lower western elevation of Roof B, facing north

Plate 52: Lower western elevation of Roof B with Large Brick Warehouse (NHLE 1228533) (far-right) facing south

Plate 53: Narrow lattice beams (upper centre) and attached cantilevered Roof C

3.3.6 As with the eastern elevation, beneath the bottom edge of the canopy was an eaves trough above the western column (Plate 54), which ran the length of canopy and above the top edge of the cantilevered Roof C. Above this, the western pitched roof was of the same construction as the eastern elevation with a lower section of corrugated metal sheeting, a central section of translucent corrugated fibre sheeting and a narrow strip of corrugated metal sheeting above that. Again, where the upper section of the pitched roof met the raised roof lantern, two rows of metal sheeting created longitudinal ventilation slats, with its eastern pitched roof constructed of translucent corrugated fibre sheeting.

Plate 54: Partially visible western pitched roof of Roof B (left) with western pitch of roof lantern above (centre-left), facing south

Southern elevation

3.3.7 The southern gable end was identical in construction and appearance to the northern gable end with a wrought iron truss containing a central moulded roundel with fleur-de-lis decoration at the intersection of cross-bracing members (Plate 55 & 57). The truss was held together by joint plates, rivets and bolts and spanned Platform 4 on its eastern side and Platform 8 on its western side. Above, was another wrought iron curved arch with two small circular elements and a pointed arch above, forming the southern gable end of the raised roof light (Plate 56). Along the edge of the roof line, the south-facing rafters were covered by sheets of corrugated metal cladding. The southern gables condition was, however, notably worse than the northern gable end as there was greater evidence of surface corrosion to the iron components.

Plate 55: Southern elevation of Roof B with Roof A attached (right), cantilevered Roof C attached (left) and Large Brick Warehouse (1228533), facing north

Plate 56: Southern gable end of raised roof lantern with central cross brace and moulded roundel beneath

Plate 57: Close up of central roundel with fleur-de-lis decoration

3.3.8 Beneath the truss at the western end, the supporting compound-riveted wrought iron column had the same architectural detailing as the western supporting column of the southern elevation of Roof A, with its upper section displaying chamfered edges and panelling beneath the eaves trough. Attached to its western edge was the cantilevered Roof C and to the east was the larger pitched truss roof of Roof A. At the western end, the supporting column was the sixth from the southern end of the Island Platform and was shared with Roof A.

Internal Descriptions

3.3.9 Both the internal northern and southern elevations corresponded with their external descriptions and so will not be repeated in this section. What will be presented, however, are the internal descriptions of the eastern and western elevations and a description of the underside of the roof's structure. When describing the direction of the internal elevations they will correspond with the direction of the exterior elevation.

Eastern Elevation

3.3.10 The internal eastern elevation comprised 11 compound-riveted wrought iron columns and two decorated cast iron columns located at the centre-northern end and were shared with the western internal elevation of Roof A (Plate 58, 59 & 60). Spanning between the wrought iron columns, and above the two cast iron columns, were the longitudinal composite lattice beams with exposed rivets consisting of a deep Howe-truss with a small truss above. Above the smaller truss, the large, pitched trusses which spanned the width of Roof B were connected above.

Plate 58: Eastern elevation of two wrought iron columns with lattice beams located at the northern end of Roof B, facing east

Plate 59: Eastern elevation showing centre-north located cast iron column with lattice beams above, facing east

Plate 60: Southern end of eastern elevation

3.3.11 Above the top girder of the small truss was the underside of the canopy roof, with the underside of the lower corrugated metal sheeting and the translucent corrugated fibre sheeting present through the centre. Beneath the line of the fibre sheeting, longitudinal lattice bracing was suspended from the roof's underside and extended its length, passing through the western corner of the principal trusses.

Western Elevation

3.3.12 The western elevation comprised the internal face of 14 compound-riveted wrought iron columns with incorporated down-pipes and longitudinal lattice beams consisting of a deep Howe-truss and smaller truss above spanning between them (Plate 61 & 62). Level with the height of the smaller truss, modern piping could be seen connecting the underside of the eaves trough to the down-pipes (Plate 62). Above the smaller truss, the large pitched trusses which spanned the width of the roof were connected above (Plate 63).

Plate 61: Western elevation of two wrought iron columns with lattice beams located at the northern end of Roof B with the goods yards visible behind, facing west

Plate 62: Southern end of western elevation with Large Brick Warehouse (NHLE 1228533) behind, facing west

Plate 63: Southern corner of western elevation showing the western ends of the principal trusses connected above the small Howe truss, facing north-west

3.3.13 Above the top girder of the small truss was the underside of the canopy roof with the underside of the lower corrugated metal sheeting and the translucent corrugated fibre sheeting present through the centre providing a dim light (Plate 63). Beneath the line of the fibre sheeting, lattice bracing was suspended from the roof's underside and extended its length, passing through the eastern corner of the principal trusses.

Central Roof Structure

3.3.14 The central underside of Roof B was dominated by the principal wrought iron trusses comprised of joists, struts and tie rods, interlocked with joint plates, rivets and bolts, which spanned its length and were identical in design to the one present at the northern and southern gable ends, with fleur-de-lis moulded roundels and central cross-bracing members (Plate 64). The positioning of the trusses lined up with those trusses of Roof A and the half trusses of Roof C. Above, the extant roof lantern was supported by a curved and pointed arch separated by two small circular elements, located on top of each of the principal trusses that connected to the central ridge of the lantern by joint plates and bolts (Plate 65). V-shaped brackets and tie-rods were also connected to the trusses and longitudinal lattice bracing ran the length of the roof, between the lower edge of the lantern and top edge of the pitched roof on both the eastern and western sides. Along the lower section of the

pitched roof and beneath the edge of the lantern was the corrugated metal sheeting, with the remainder of the roof comprising the translucent corrugated fibre sheeting.

Plate 64: Underside of Roof B and lantern, north-west

Plate 65: Northern end of underside of Roof B and lantern with northern elevation of 'Tea Rooms' (bottom)

3.3.15 Located at the northern end behind the gable truss were two cross braces with two thick horizontal brackets beneath attached to the second truss (Plate 46). At the southern end, three cross-bracing members with decorative fleur-de-lis moulded roundels were laid perpendicular to the upright central cross-bracing members (Plate 66). This followed the same design as the southern end (Manchester end) of Roof A, only being present at the southern end.

Plate 66: Decorative moulded fleur-de-lis roundels (bottom) laid perpendicular to the upright central cross bracing members at the southern end of Roof B, marked by arrow

3.3.16 Attached to a principal truss at the northern-end were two squared clocks, likely dating to the second half of the twentieth century which hung over the eastern and western platforms (Plate 67). Located centrally attached to three principal trusses were three industrial pendant lights (Plate 67). Beyond this at the central-southern end, the roof of the twentieth century signal box was located just beneath the principal trusses.

Plate 67: Northern end of Roof B with two station clocks hung either side of the 'Tea Rooms' and three central pendant industrial lights, facing north-east

3.4 Roof C

3.4.1 Roof C was a cantilevered canopy measuring a width of approximately 5m and attached on its eastern edge to the western edge of Roof B, extending over the edge of Platform 8 (Plate 68). Its external appearance showed it to be constructed of corrugated metal sheeting topped across its upper section by translucent corrugated fibre sheeting. Its northern, southern and western elevations were formed of dropdown corrugated metal sheeting which hung from its edges with the northern and southern ends having a slight arch shape to enable train traffic to pass beneath (Plate 68).

Plate 68: Southern elevation of Roof C (left) attached to western edge of Roof B (centre), with the Former Good Storage Yard and former Office Building visible in the goods yard (background left), facing north

3.4.2 Internally, Roof C was connected to the composite lattice beams on the western edge of Roof B by riveted lattice wrought iron brackets, or half trusses, that ran along its width, with those brackets attached to the compound-riveted wrought iron columns, having a large circular supporting element at the eastern-end, with all having a smaller circular element at the western end. (Plate 69, 70, 71, 72 & 73). Above, the underside of the canopy showed the corrugated metal sheeting and upper section of translucent corrugated fibre sheeting with the half trusses appearing to line up with those trusses of Roof B.

Plate 69: Northern end of Roof C, facing north

Plate 70: Southern end of Roof C with partial eastern elevation of the Large Brick Warehouse (NHLE 1228533) (right), facing south

Plate 71: Example of riveted lattice wrought iron brackets within Roof C With the Large Brick Warehouse (NHLE1228533) (background left), facing south-west

Plate 72: Example of the western end of a riveted lattice wrought iron bracket attached to the western dropdown corrugated metal sheeting

Plate 73: Example of eastern end of a riveted lattice wrought iron bracket attached to the western composite lattice beam of Roof B (right)

4 DISCUSSION

4.1 Introduction

4.1.1 The following discussion draws upon both the historic background and archaeological evidence identified during the historic building survey to produce a narrative on the origins of the Huddersfield Railway Station trainshed Roofs A, B and C. It is followed by a discussion of the function of the roofs and a commentary upon their development over time before briefly concluding the structure's heritage significance and their contribution to our understanding of trainshed roofs of this type.

4.2 Origins

4.2.1 There has been recorded human activity on the site of Huddersfield dating back 4,000 years with archaeological remains found in areas of high ground and along the river valleys (Historic England 2022). The earliest surviving written record of Huddersfield is in the Domesday Book of 1086 where it is named '*Oderefelt*' and described as comprising 720 acres of largely wasteland (*ibid*). Its history as a town, dates back to 1559 when the land was purchased from the Crown as a manor by William Ramsden, later becoming a market town when the Lord of the Manor, John Ramsden, was granted a Charter by Charles II in 1671. (Urbed 2009; Historic England 2022). Huddersfield's landscape of hills and valleys made it a suitable environment for sheep farming and it soon became realised that the surrounding fast-running water sources were perfect for the washing of raw wool (Historic England 2022; English Cloth 2020). As a result, the town's textile industry developed during the early period of the Industrial Revolution (mid to late eighteenth century), with trade and manufacturing expanding significantly. New technologies and methods of transportation saw the construction of the Huddersfield Broad Canal (opened 1779), connecting the town via the canal network to the North Sea; and the Huddersfield Narrow Canal (opened 1811), creating a trans-Pennine route with onwards links to Manchester and Liverpool (Historic England 2023). This gave the town access to international markets turning Huddersfield into a major centre for wool production (Urbed 2009).

4.2.2 The early Victorian period (1837 to 1850) saw the exponential growth of Huddersfield with the arrival of the railways in the 1840s, as new transport lines to industrial centres such as Manchester and Leeds brought increased trade and wealth to the town (Historic England 2022). The Transpennine Route, constructed between 1836 and 1849, reflected the 'Railway Mania' of the mid 1840s as multiple railway companies expressed commercial confidence in the expansion of the network (Network Rail 2021). Huddersfield Station was the product of a joint enterprise between two railway companies, the Huddersfield & Manchester Railway (later becoming LNWR) and the Lancashire & Yorkshire Railway (*ibid*). Designed by architect James Pigott (J. P.) Pritchett and built by the firm of Joseph Kaye, the station was constructed between 1846 to 1850. Its long Classical façade designed in a country house style led it to being considered by many as one of the finest station facades in Britain (Network Rail 2021). Its original layout, evidenced through the historic

OS map of 1851 (surveyed 1848), consisted of a single platform and through line located to the rear (west) of the principal station building that was covered by a composite pitched iron roof with a central roof lantern spanning its length (*ibid*). Its eastern edge appeared attached to the rear (western) edge of the station buildings that extended beyond the northern pavilion, with its western side supported by a row of evenly-spaced columns. Due to the year in which the OS map was surveyed, the original roof was constructed sometime between 1846 to 1848 and contemporary with the early phase of the station construction.

4.2.3 The station underwent a large phase of development during the mid to late nineteenth century as an increase in passenger and freight traffic resulted in the expansion of the rail network (Network Rail 2021). The station enlargement was completed in 1886 and consisted of three through platforms and five bays for local and terminating services that were covered by a new, wider roof (*ibid*). Historic records show that Roof A and Roof B were constructed as part of this programme of expansion and completed in 1886, following the collapse of an earlier roof in 1885 that killed four men and injured several others (*ibid*). The roofs are first depicted on the historic OS map of 1893 (surveyed 1887 to 1889), one year after their completion, with historic photography from 1886 showing them to be contemporary with one another as they are captured simultaneously under construction. Although greater in width and in length at the southern end, Roof A appears to follow a similar footprint to the original roof of 1846-1848, as it is shown attached to the main station building and extending northwards beyond the northern pavilion. An exact date for the construction of the cantilevered Roof C, attached to the western edge of Roof B, was undetermined; however, the OS maps of 1890 (surveyed 1889) and 1893 (surveyed 1887 to 1889) depict the far western platform (known today as Platform 8) to be covered by the trainshed roof and so it can be inferred that Roof C was constructed sometime between 1887 to 1889.

4.2.4 Both Roofs A and B had pitched roofs with wrought iron trusses and central roof lantern that represented the 'Euston Roof' design commonly used during the nineteenth century (Network Rail 2021). Although Roof A has since lost its central roof lantern, historic photography records its former appearance both during and after its construction (Plate 2 & 3). Archaeological investigations undertaken during the survey determined that both roofs retained most of their 1886 wrought iron components with the supporting compound-riveted columns being original to their construction based upon the materials used and uniform appearance and the way in which they were connected to the upper roof trusses (*ibid*). The origins of the two decorated cast iron columns located at the centre-northern end of the island platform and shared between both Roofs A and B, however, was undetermined. The difference in materials and design along with their position being out of sequence with the uniformly-spaced wrought iron columns posed numerous theories. One suggestion is that they may be contemporary with Roof A and B and purposely designed in this way (*ibid*). Another is that they may have been part of an earlier roof structure built during the period of station expansion which collapsed in 1885 (*ibid*). Alternatively, they may have been two surviving

columns repurposed from the original roof structure of 1846-1848, as the OS map of 1851 depicts the roofs western edge was supported by a row of 24 circular columns. In all cases however, none of these theories could be verified and no additional information was gathered during the initial site visit (October 2023).

4.3 Function

4.3.1 The primary function of Roofs A, B and C was for the practical purpose of providing shelter and protection from the weather for the station passengers, personnel and the station structures, fixtures and fittings below. The use of cast iron beams and columns used within the construction of structures first appeared in the 1790s in multi-storey textile mills and then in store-houses in naval dockyards (Bussell 2019). This was soon followed by the railways who adopted iron for the construction of trainshed roofs ranging in scale from the largest spans down to the smallest (*ibid*). The use of wrought iron in riveted plate girders and trusses developed from *c* 1850s, as wrought iron offered a much higher tensile strength than cast iron as it becomes stronger the more it is worked (*ibid*; Prestige Wrought Iron 2023). In the case of the pitched roofs of Roof A and Roof B, the use of lightweight wrought iron roof trusses and their components enabled them to span a large area to the west of the main station building, covering the majority of the station's platforms constructed as part of its enlargement in the 1880s.

4.3.2 In addition to the wrought iron trusses, the use of corrugated sheet metal (possibly corrugated iron, but this could not be confirmed) covered the tops of the pitched roofs of Roof A and B, and the cantilevered roof of Roof C, forming the roofs canopy, providing shelter and protection. Corrugated iron was patented by Henry Robinson Palmer in 1829 as he recognised the materials potential for covering wide span roofs (Nicholson 2019). The use of grey slate above the corrugated metal sheeting was only present on Roof A, possibly as a result of its scale and its direct association with the main station buildings. It is important to note however, that it was not clear whether the corrugated sheeting present during the site visit (October 2023) was original to the canopy roofs or part of later structural improvements as its condition, especially on Roof C, appeared to be very good. Alongside the use of corrugated sheeting covering wide spans, the use of translucent corrugated fibre sheeting present across the length of each of the roofs, had the function of providing natural daylight into the platform space below.

4.3.3 The function of the central roof lanterns raised above Roof A and Roof B (although Roof A's has since disappeared but present on historic photography, Plate 3), would have had, and in the case of Roof B, still does, a multi-functional use as both a daylighting architectural element and as a means of ventilating the underside of the canopies. As with the translucent corrugated fibre, the pitched translucent sheeting on top of the extant lantern enabled natural daylight into the covered space below. Observations during the survey (October 2023) also recorded the presence of longitudinal slats between the upper roof line of Roof B and the lower roof line of the raised lantern. These would have had the function of allowing steam and smoke from the steam locomotives to exit the underside of the canopy.

Evidence from historic photography shows that Roof A's raised lantern was of similar construction with the same function, as longitudinal slats are visible along the lantern edges with open spaces, providing a means of steam / smoke to escape, present along the length of its pitched roof top (Plate 3).

4.3.4 Further practical functions recorded of the two main pitched trussed roofs were the presence of eaves troughs located along the western and edge of Roof B and along the shared western/eastern edge of Roofs A and B. The eaves trough along the eastern edge of Roof A was not observed but the presence of downpipes attached to the interior eastern elevation suggest there was one located along this edge. These had the obvious function of channelling rainwater from the pitched roofs towards the down-pipes, each of which were incorporated into one of the compound-riveted wrought iron columns supporting the roof structures. Based upon the design of the eaves trough, and their apparent wrought iron construction, they were likely contemporary with the 1886 roofs. Although not observed, it is likely the downpipes were connected to a drainage system below the station platforms.

4.3.5 Within the internal roof structure, the perpendicular cross-bracing members with moulded roundels located at the southern ends of both Roof A and B, may have had the function of providing additional support to the terminating ends of the pitched-trussed roofs and the raised lanterns. Although they are not present at the northern ends of both roofs, historic OS mapping shows that the northern ends of both Roof A and B, (and possibly Roof C), have been reduced in length since their original construction. Although this will be discussed further in the following section, it is possible that the northern ends also had perpendicular cross-bracing members and moulded roundels prior to this modification.

4.3.6 In addition to the practical function of the roof structures, it can be suggested they contained within their construction architectural elements which had a symbolic function. The moulded roundels at the intersection of cross-bracing members located in the centre of each of the wrought iron trusses within Roof A and B appeared to have fleur-de-lis emblems attached to the upper and lower section. The fleur-de-lis has long been associated with French Crown and is a stylised lily flower with three petals tied by a band at the base. Although it has many symbolic meanings and often seen on heraldic imagery, within the context of the station, it may have religious connotations portraying a symbol of Christianity, with the three petals representing the Holy Trinity. Alternatively, the lily is also known as a birth flower and could symbolise the roof structures rebirth following the collapse of the roof in 1885 or the original roof of 1846-1848. The presence of fleur-de-lis motifs on the base of the decorative cast iron columns may have been the reason for incorporating them into the components of the roof structure, connecting past events / structures to the newly-constructed roof. Alternatively, reference to their form and appearance as 'rose' connections and their white appearance may symbolism the white rose of Yorkshire. Each of these interpretations are, however, only supposition and no further evidence has been found to either support, or provide further interpretations.

4.4 Development

4.4.1 Huddersfield Station (NHLE 1277385) was constructed between 1846 to 1850 and first appeared on historic OS mapping of 1851 (surveyed 1848) along with its adjacent goods depot. In the mid to late nineteenth century, the station underwent a large phase of development as a result of an increase in passenger and freight traffic expanding the network (Network Rail 2021). This had a direct impact on the station and by the 1860s, the station's facilities became unfit for purpose as increased usage and the limited capacity of the single platform resulted in a number of serious accidents (*ibid*). The station underwent a programme of enlargement that was completed in 1886 and included the extension of the original single platform, a new island platform located to the west with waiting rooms constructed of timber-board (known today as the Tea Rooms), and a new, wider pitched roof (Roofs A, B and possibly C).

4.4.2 Consultation of historic OS mapping from 1893 (surveyed 1887-1889), surveyed one year after the programme of enlargement, shows the clear development of the station. Appended to the rear (western) side of the main station building is the large Roof A with Roof B attached to its western edge and possibly the cantilevered Roof C, attached to Roof B's western edge. Historic mapping also depicts that the roofs extend to the north and terminate in line with a row of detached offices, following a similar footprint to the original roof of 1846 to 1848. Further consultation of historic OS mapping up to 1966 (surveyed / revised 1958 to 1963) showed the form of the station roof remained the same with no clear structural changes.

4.4.3 Archaeological investigations during the building survey determined that the roofs remained largely unchanged and that the majority of the surviving wrought iron structure of Roofs A and B were contemporary with their 1886 construction. (The same applied to Roof C but this can only be inferred after 1887, see 4.2.3). Despite this, however, there were elements of the roofs structure that did provide evidence of possible later phasing. This was most notable at the northern end of both Roofs A and B, as attached at either corner of the central cross-bracing members were four iron plates that overlapped the original connecting plates of the first and second trusses, with two thick iron supporting brackets between them. These were notably different in appearance compared to the other wrought iron components and seemingly later in date. Although not depicted on the available historic OS mapping, but observed during the site visit (October 2023) and through the use of Google Earth, it was evident that the northern ends of both Roofs A and B have been reduced in length by approximately 25m. Although an exact date of this modification has not been established, historic OS mapping suggest it took place sometime after 1966. This could explain why later structural components were found at the northern ends of both roofs, as following the reduction in length, additional support was needed at the newly created northern ends. In addition, this could explain why cross-bracing perpendicular to the vertical cross-bracing within the trusses was only found at the southern ends of Roofs A and B as, if they were once present at the northern ends, they were likely removed during this later phase of development.

4.4.4 Further evidence for the development of the roof structure was observed along the eastern internal elevation of Roof A (rear western elevation of the main station building). Located across the upper section of the elevation above both the northern and southern wings of the station, a later ashlar sandstone wall extension appeared to have been constructed with two rows of string coursing and inset, white painted, iron supporting brackets. Initially thought to be part of the original upper wall of the two wings, a visible wall join, located at the southern end of the eastern elevation, showed there to be a later ashlar sandstone structure butted against the southern corner of the southern pavilion. The wall join is shown to extend from the platform level up to the string course where it stops. Historic OS mapping from 1890 (surveyed 1888) clearly depicts newly-constructed structures against the original southern pavilion for which the eastern side of Roof A is shown to be attached. The indication that the wall join does not extend upwards through the string coursing and the upper section of wall suggests the upper section of the eastern elevation was likely constructed during the programme of station enlargement on top of the original rear (western) elevation of the station building's wings. This phase of development shows a physical impact on the main station buildings and suggests the extant roof of 1886 was greater in height than the original roof of the 1840s. The decorated corbels at the base of the supporting brackets may have also been part of this later development, or possibly structural remains from the original roof structure (1846-1848), thus marking the former height of the station canopy's roofline prior to the station alterations.

4.4.5 The presence the two decorated cast iron columns shared between Roofs A and B, at odds with the compound-riveted wrought iron columns, provided another possible insight into the development of the roofs structure. Although it was unclear as to the phase in which these two columns belong, they may have had an association with three separate phases of the station's history. The first suggestion is that they belong to the latest phase of development and contemporary with the roof of 1886, with their ornate design marking the location of the subway link on the Island Platform and greater gap between them limiting the amount of weight above the subway ceiling below. Alternatively, they may be the only surviving structural elements belonging to a phase of development in 1885 which saw the roof structure collapse and kill four men. A final suggestion is that they belong to the original station roof of the 1840s as the OS map of 1851 shows the western edge of the pitched roof canopy was supported by a row of circular columns. It is possible that they survived the period of enlargement and were re-incorporated into the later roof of 1886. However, none of these theories can be proven and no additional evidence was established to support these claims.

4.5 Conclusion

4.5.1 This report has detailed the results of an initial historic building investigation of the Huddersfield Station (NHLE 1277385) trainshed Roofs (A, B and C), presenting the results of the historic building survey with support from historic documentation and an historic map regression, an additional site visit

will be required once scaffolding is erected, and a full final report will be produced following that visit. The extant trainshed roofs are rare surviving examples of late nineteenth century design and construction with the iron-trussed pitched Roofs of A and B representative of the 'Euston Roof', an approach pioneered by the London & Birmingham Railway at Euston in 1837 and adopted by a number of stations during the period, particularly those of the LNWR (Network Rail 2021).

4.5.2 Historical evidence identified that Roofs A and B date to 1886 following the completion of a programme of station enlargement during the 1880s, replacing the original single pitched canopy roof contemporary with the initial construction of the station during the late 1840s, and a later station roof that collapsed during construction in 1885. Historic photography records the two spans of Roof A and B simultaneously under construction with historic OS mapping showing Roof A following a similar footprint to the original roof of the 1840s. An exact date for the construction of the cantilevered Roof C, attached to the western edge of Roof B, was however, not confidently determined, but consultation of historic mapping suggested it was either contemporary with Roofs A and B or constructed shortly after, possibly sometime between 1887-1889.

4.5.3 Archaeological investigations determined that the station roof structures retained much of their original wrought iron construction, demonstrating the engineering advancement of the late nineteenth century (Network Rail 2021). The overall wrought iron pitched-trussed roofs consisted of two main spans, topped with corrugated metal sheeting (possibly iron sheeting), covering the majority of the platform enlargements of the 1880s. The primary function of the roof canopies was to protect and shelter station passengers, personnel and structures below from the weather, (which it continues to do today), with architectural detailing, such as that found on the moulded roundels (or 'rose' connections) having a possible symbolic function. There was, however, evidence of changes to the original form of the station canopies with the northern ends of Roofs A, B and possibly C, having been reduced in length sometime during the second half of the twentieth century. The presence of perpendicular cross-bracing members at the southern end of both Roofs A and B suggested there may have been similar structural supports at the northern end prior to its shortening. In addition to this, further change in form was observed above Roof A as the raised roof lantern formerly running along its length was no longer present, with photographic evidence showing it to have disappeared sometime prior to 1954. Observations of the extant roof lantern above Roof B with the support of historic photography however, enabled an interpretation of its former appearance to be ascertained.

4.5.4 Despite the historical and observational evidence determining the roofs were erected during a single phase of development during the 1880s (with the possible exception of Roof C), and that they retained the majority of their original wrought iron construction, two decorative cast iron columns were at odds in appearance and material construction compared to the rest of the roof structures' wrought iron supporting columns. This suggested they may have dated to an earlier phase of development or period in the station's history, but a lack of evidence however, prevented an accurate interpretation

of their origin and reason for their elaborate design alongside their difference in material construction.

4.5.5 The significance of the station Roofs A, B and C lies with their direct association with the Grade I Listed Huddersfield Station (NHLE 1277385) and the surrounding industrial buildings within the station goods yard, most notably the Large Brick Warehouse (NHLE 1228533) located immediately to the west. Its historic value derives from its association with a period of station expansion during the late nineteenth century and its survival provides an illustrative connection to this period. On a broader scale, the roofs are one of the few remaining 'Euston Roofs' still in existence and plays an important part in our understanding of the style, materials and engineering developments of the period (Network Rail 2021). Although they are somewhat shadowed by the grandeur and scale of the main station buildings attached to the east, especially when viewed from St George's Square, views from south and west evidence the engineering of the roof's and place them within their surrounding industrial context (*ibid*). The proposed works for the removal of Roofs B, C and the southern two bays of A will take away an element of its historic significance but, the retention and strengthening of the majority of Roof A will ensure its partial survival, allowing it to continue to contribute to the historic landscape of the station area and adjacent goods yard. This will ensure it continues to provide historical context to Huddersfield Station (NHLE 1277385), the Large Brick Warehouse (NHLE 1228533) and the wider historic environment, maintaining a tangible link to Huddersfield's industrial past.

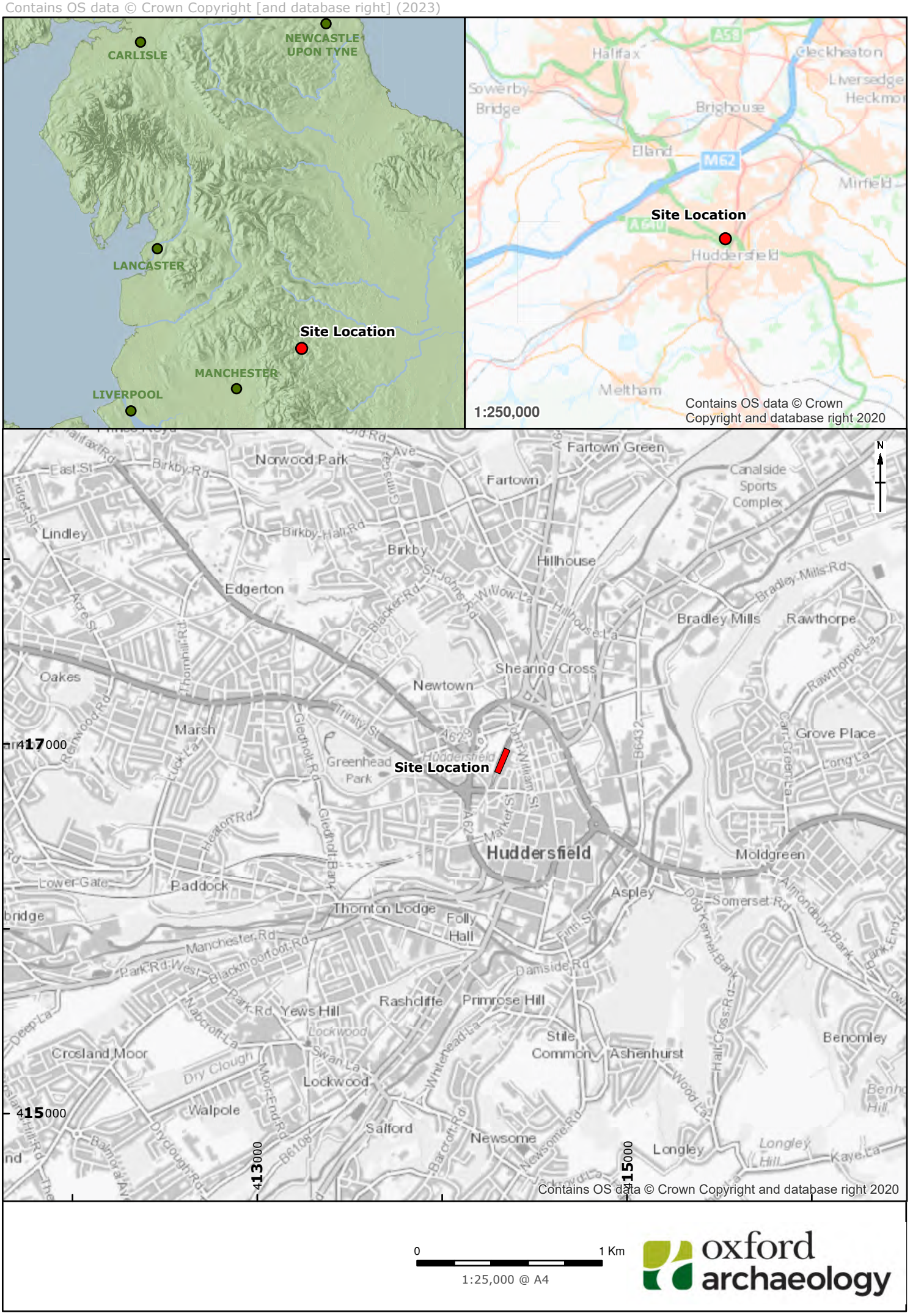


Figure 1: Site Location

Figure 2: Listed building map of surrounding area

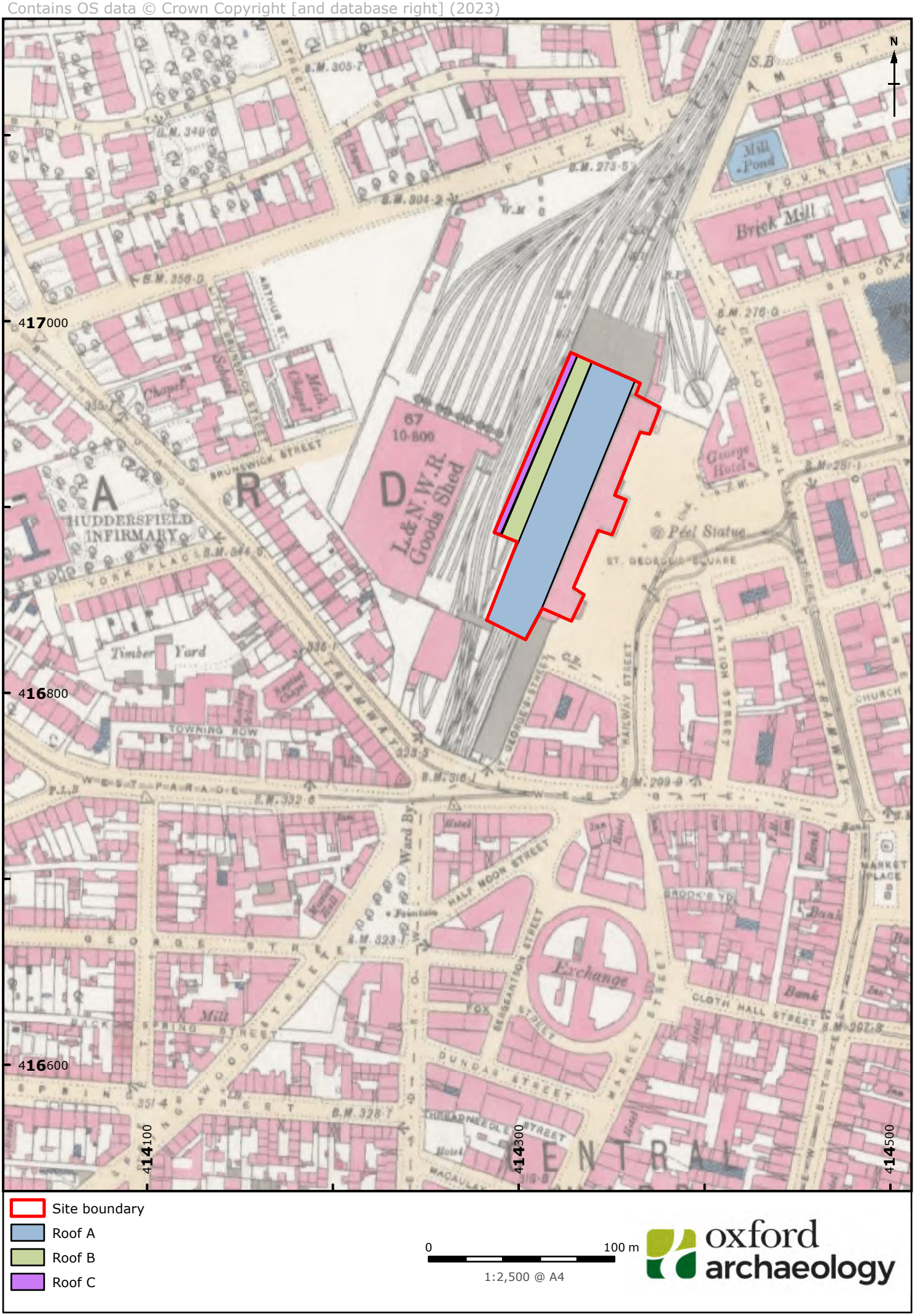


Figure 3: First Edition Ordnance Survey map, 1:2500, 1893, showing roof designation

Google Earth 7.3.6, Image Landsat/Capernicus, 2021

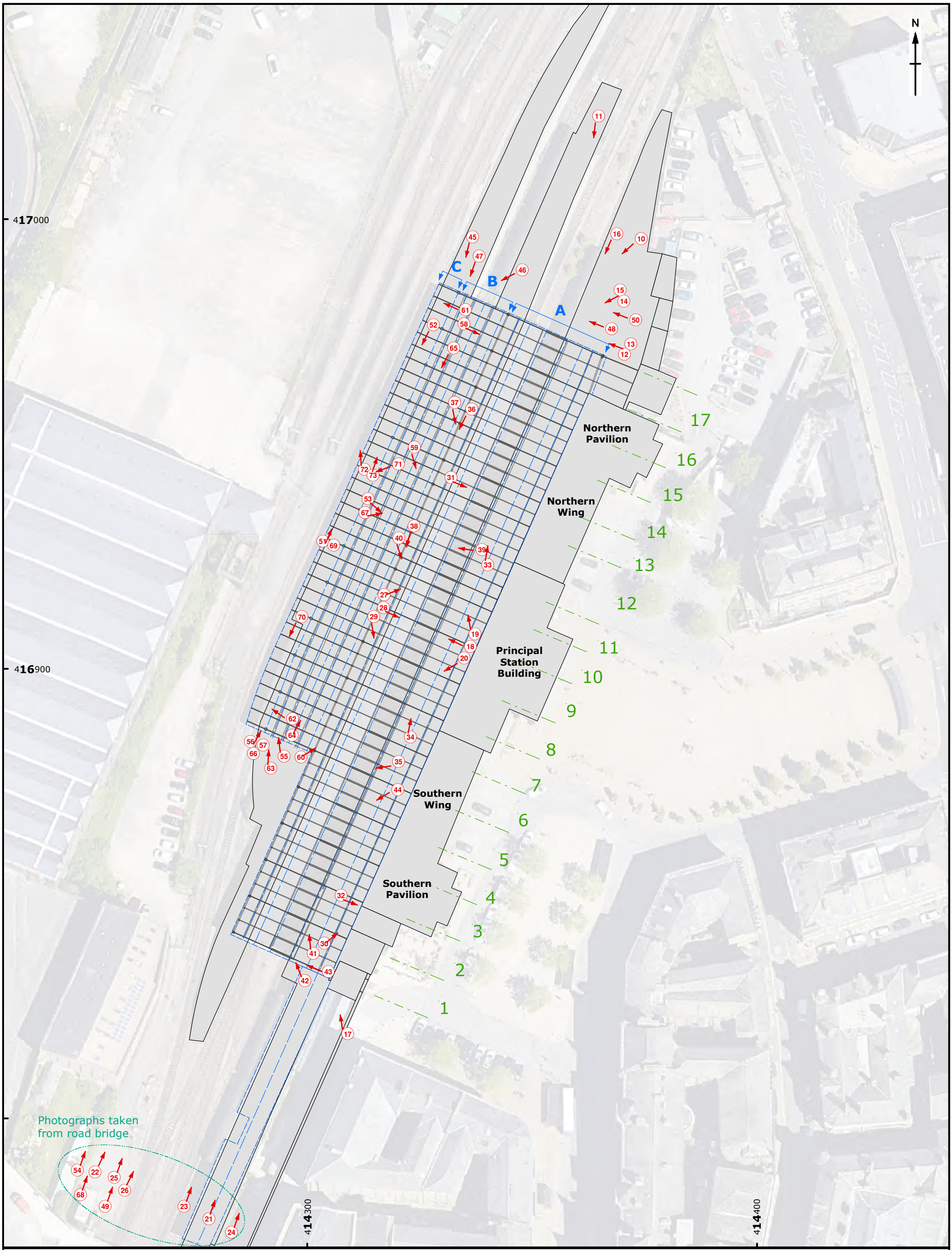


Figure 4: Photograph location

APPENDIX A WRITTEN SCHEME OF INVESTIGATION

Transpennine Route Upgrade

Written Scheme of Investigation – Huddersfield Station: Roofs A, B & C

Network Rail

November 2022

Contents

Tables

Inserts

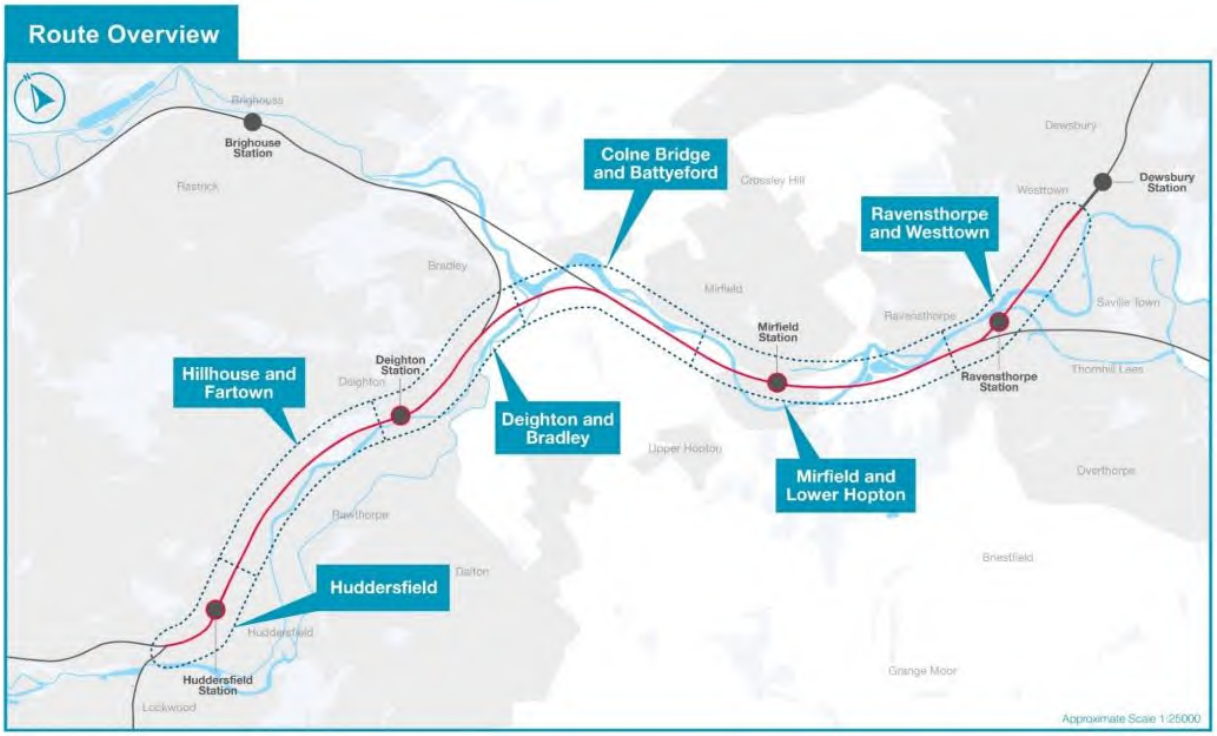
1. INTRODUCTION

1.1 The Scheme

1.1.1 The objective of the Transpennine Route Upgrade (TRU) is to improve the Transpennine railway between Manchester, Huddersfield, Leeds and York and improve connections between key towns and cities across the north of England. The works to which this document relate lie within the Network Rail (Huddersfield to Westtown (Dewsbury) Improvements) Order and will contribute to the overall TRU aims of increasing service capacity and offering journey time benefits. This will deliver four tracking and upgrading of the existing railway line including track realignment, electrification of the line, increase in line speeds and remodelling and replacement of stations, as well as various other engineering works necessary to realise the benefits of the scheme including alterations to, or replacement or demolition of, existing bridge structures.

1.1.2 For the purposes of engineering and construction, this section of TRU has been split into six sub-sections ("Route Sections") as set out below and presented indicatively in Insert 1-1.

- Route Section 1 – Huddersfield;
- Route Section 2 – Hillhouse to Fartown;
- Route Section 3 – Deighton and Bradley;
- Route Section 4 – Colne Bridge and Battyeford;
- Route Section 5 – Mirfield and Lower Hopton; and
- Route Section 6 – Ravensthorpe and Westtown



Insert 1-1 Route overview of the Huddersfield to Westtown (Dewsbury) section of the Transpennine Route Upgrade (TRU), showing Route Sections.

1.1.3 Huddersfield Station is situated in Route Section 1 – Huddersfield.

1.1.4 The Written Scheme of Investigation (WSI) covers historic building recording (HBR) taking place on the trainshed Roofs A, B and C which form part of the Grade I Listed Huddersfield Station. This document sets out the methodology for historic building recording to Level 3

and/or Level 2 (Enhanced) standard as applicable.

1.1.5 The methodology for recording has been developed in accordance with the guidance set out in Historic England's *Understanding Historic Buildings: A Guide to Good Recording Practice*[1], which provides best practice guidance for historic building recording.

1.1.6 The requirement for historic building recording of these structure was identified in the Heritage Assessment[2] submitted in support of the Listed Building Consent application and forms part of the agreed mitigation under the Transport and Works Act Order (TWAO) and Listed Building Consent granting the scheme consent Prior to being formally submitted to discharge the relevant listed building consent condition, a copy of this WSI has been sent for review to the Conservation Officers at Kirklees Council and the Senior County Archaeologist at West Yorkshire Archaeology Advisory Service (WYAAS).

1.2 Aims and Objectives

1.2.1 Historic building recording of bridges and railway stations proposed for alterations and removal was identified in the Environmental Statement[3] for the scheme. The requirements for historic building recording of these structures was identified as a requirement to discharge Condition 3 attached to the granted Listed Building Consent for the structure. The wording of the condition is as follows:

> ***3. (Huddersfield Station Recording)*** *No works of demolition shall take place until an approved methodology for full structure recording has been approved in writing with the local planning authority. Subsequent recording to the appropriate level (as recommended by Historic England) will take place prior to demolition and be deposited with the West Yorkshire Archive Service and West Yorkshire Historic Environment Record in accordance with the timescales agreed in the approved methodology. The following structures are the subject of this condition:*
>
> *i) The entire Huddersfield Station Roof (level 3); and*
>
> *ii) Huddersfield Station Tea Rooms (level 2).*

1.2.2 Though the wording of the condition identifies a recording to Level 3 standard for the entire station roof to be required, the exact scope of the recording was subsequently agreed with Kirklees Council. The Listed Building Consent for Huddersfield Station granted the retention and strengthening of the majority of the Roof A span of the station roof. Taking this retention into account, Kirklees Council agreed[4] that the section of the roof to be retained should be recorded to a Level 2 (Enhanced) standard, with the rest of the roof to be removed (comprising a section of Roof A at the southern end of the station and the entirety of Roofs B and C) being recorded to Level 3 standard. The full scope of the surveys are outlined in Sections 4 and 5 of this WSI.

1.2.3 The aims of the historic building recording are:

[1] Historic England, 2016. *Understanding Historic Buildings: A Guide to Good Recording Practice*
[2] Network Rail, 2020. *Network Rail (Huddersfield to Westtown (Dewsbury) Improvements) Order Huddersfield Station – Heritage Assessment*.
[3] Network Rail, 2020. *Network Rail (Huddersfield to Westtown (Dewsbury) Improvements) Order application Environmental Statement, Volume 2i – Scheme-wide Assessment, Chapter 6 – Historic environment*
[4] This proposal was presented to the Conservation Officers of Kirklees Council in a meeting on 17 March 2022, with the Conservation Officers confirming that they were content with this approach, as recorded in the minutes of this meeting.

- To document the current form and survival of historic railway structures proposed for alteration or removal on the Huddersfield to Westtown (Dewsbury) section of TRU; and
- To provide an objective documentary record of the structures.

1.2.4 The objectives of the recording works are:

- To record Roofs A, B and C of Huddersfield Station, to a Level 3 and Level 2 (Enhanced) standard, as defined in Section 5.2 and 5.3 of this WSI, in line with the Historic England guidance on recording within *Understanding Historic Buildings: A Guide to Good Recording Practice*[5];
- To disseminate the results of the recording works through deposition of an ordered digital archive and detailed report with the West Yorkshire Historic Environment Record (HER); and West Yorkshire Archive Service, in accordance with the requirements of the West Yorkshire Archaeological Advisory Service (WYAAS); and
- To disseminate the results of the recording works through deposition of digital data and report with the Archaeology Data Service (ADS) and submit details of the project to the Online Access to Index of Archaeological Investigations (OASIS) Project.

[5] Historic England, 2016. *Understanding Historic Buildings: A Guide to Good Recording Practice*

2. HISTORICAL BACKGROUND

Historical Background – Transpennine Route

2.1.1 The Transpennine Route between Huddersfield and Westtown was constructed and opened between 1836 and 1849. The route today comprises sections of rail line developed by different railway companies, characteristic of the wider Transpennine Route between York, Selby and Manchester. The complex chain of companies and projects is a typical product of the "Railway Mania" of the mid-1840s, the height of a period of commercial confidence and expansion in the railways[6].

2.1.2 Between Huddersfield and Westtown, the Transpennine Route is made up of sections of:

- The Manchester & Leeds Railway, constructed 1836-39, between Ravensthorpe and Heaton Lodge;
- The Leeds, Dewsbury & Manchester Railway, constructed 1845-47, between Westtown (Dewsbury) and Ravensthorpe; and
- The Manchester & Huddersfield Railway, constructed 1846-49, between Heaton Lodge and Huddersfield.

2.1.3 The line formed a new, more direct route to the West Riding from Manchester, in competition to the earlier Manchester & Leeds Railway which had been constructed through the Calder Valley in the late 1830s. The more direct route was enabled partly through the advances in tunnel construction and large-scale engineering technology, notably realised through the construction of the 3-mile Standedge Tunnel under the Pennine watershed to connect the line between the Upper Thame and Colne Valleys. Between Huddersfield and Westtown (Dewsbury), the line is partly characterised by such examples of large scale and/or pioneering engineering structures, including tunnels, viaducts and both masonry and cast-iron bridges.

2.1.4 The development and expansion of the railways and their associated infrastructure during the first half of the 19th century, was characterised by the considerable influence on those towns which experienced the development of this new mode of transport. The railways resulted in place-making and industrial growth, as towns benefited from the connections and influences which they brought with them. The Transpennine Route between Huddersfield and Westtown (Dewsbury) certainly had an influence on towns, forming an additional infrastructure element of the expansion of settlements such as Huddersfield already underway as a result of the growth of textile, mining and maltings industries. The prime example of this is seen through Huddersfield Station, a magnificent exercise in architectural patronage, which itself influenced the growth and development of the town centre and shaped the character of Huddersfield's architecture. Other stations along the route are more minor examples and have been altered or rebuilt during their lifetime.

2.1.5 With the continued growth of the network and expansion in volume of passenger and freight traffic during the second half of the 19th century, the LNWR embarked on widening the Transpennine Route between Ravensthorpe and Stalybridge during the 1880s and 1890s. A number of the stations and structures along the Route were altered during this period to accommodate the widening of the line.

2.1.6 Huddersfield Station is located on the section of the Transpennine Route constructed by the Manchester & Huddersfield Railway between 1846 and 1849. This section of line was

[6] Alan Baxter Associates, 2019. *TransPennine Route Upgrade Route-wide Statement of Significance*. 14.

widened during the expansion of the railway by the LNWR in the 1880s and 1890s

Historical Background – Huddersfield Station

2.1.7 Huddersfield Station originated as a product of the joint enterprise of two railway companies: the Huddersfield & Manchester Railway (which was amalgamated into the LNWR) and the Lancashire & Yorkshire Railway. The outcome of this unusual agreement allowed the companies to build a railway station of unprecedented scale. The station was jointly owned and operated by the LNWR and the Lancashire & Yorkshire railways from 1849 until they amalgamated in 1922.

2.1.8 The station was designed by architect James Pigott (J. P.) Pritchett (1789-1868) and built by the firm of Joseph Kaye. A public holiday and celebrations marked the laying of the station's foundation stone on October 9th, 1846. Work on the line was completed on August 2nd, 1847, when the station was partly opened for the commencement of services and arrival of the first train. The station building's central portion was completed in 1848, followed by the outer wings flanking the central building from both sides; the final touch was a clock, placed in the centre of the station's front façade in 1850.

2.1.9 It was Earl Fitzwilliam of Wentworth Woodhouse that commissioned Pritchett to design Huddersfield Station, and while there is no evidence to state that Pritchett and Fitzwilliam conceived a country house style that reflected the character of Wentworth Woodhouse, there certainly appears to be some stylistic similarities; the long Classical façade of the station, with its central portico and symmetrical low wings with end lodges, imitates the country house. Pritchett would also have been aware of the work of John Carr at Harewood House, Colen Campbell's Wanstead House, and of James Wyatt's work, which included Castle Coole in Enniskillen, all of which likely provided influence and appear closer to the station in design than Wentworth Woodhouse.

2.1.10 Huddersfield Station was considered by many to have one of the finest station facades in Britain. The main station building was two storeys tall and 416 ft. long, with eight Corinthian columns 68 ft. high in the central portico, flanked by single storey colonnades ending in small matching pavilions. The central building was intended to be a hotel and the pavilions the ticket offices for the two companies. However, according to Pritchett's plans on completion, the main building contained elaborate refreshment rooms, which functioned until at least 1883, arranged on either side of a central passage connecting with the long single platform beyond. The outer wings at either end did, however, house duplicate booking offices, uniformly divided waiting rooms, parcels offices and staff accommodation for both companies (see below). The station had a single platform until the enlargement that took place during the 1880s. The original railway layout consisted of a platform road and a through line. A scissors crossing enabled trains in either direction to arrive at the platform, while carriage sidings parallel with the running roads were connected to them by a series of turn-tables. A simple composite pitched iron roof originally covered the station's single platform, sitting on a row of columns on the far side of the tracks, with a further colonnade on the edge of the platform.

2.1.11 The relationship between the Lancashire & Yorkshire Railway and the LNWR at Huddersfield continued following completion of construction, with the operation of the station shared between the two railway companies. Both railway companies had their individual goods warehouses and they shared the water supply. As noted above, each company had a separate booking office, each occupying one of the lodges at the end of each wing of the station building: the Lancashire & Yorkshire Railway Company occupied the western end, while the LNWR occupied the eastern end. The crests of the Lancashire & Yorkshire Railway and the Huddersfield & Manchester Railway Company adorned their respective

office, and these features still survive today. The station remained under joint operation until the merging of the two railways into the London Midland & Scottish Railway (LMS) in 1922.

2.1.12 By the 1860s, the state of the public accommodation had become the subject of many complaints. Station facilities became less fit for purpose with the increase in usage and the limited capacity of the single platform proved a considerable issue, with a number of serious accidents known to have taken place. The issues were only exacerbated by the prospect of the Midland Railway's proposals to construct an alternative route into West Yorkshire, which would involve additional trains serving the station. By 1870, public pressure had reached a high and an inquiry was held into matters at the station, whilst the arrival of bigger locomotives and longer carriages had made the old track obsolete and it became necessary to enlarge the station platforms. In 1881, alongside the LNWR doubling of the lines through Huddersfield the decision was taken to extend the station by the addition of an island platform, providing a subway link to the new platform and erecting a large roof to cover both the old and the new platforms.

2.1.13 By 1886, the station enlargement was completed, and the station had three through platforms and five bays for local and terminating services. The accommodation in the main building was rearranged, while timber-boarded waiting rooms (today known as the 'Tea Rooms') were built on the new island platform, and the subway was built to provide access across to and from the added island platform and buildings. The 1886 station enlargement allowed for a new wider roof, that covered the extended platforms, to be built. The new platforms were given an overall pitched roof, consisting of two spans, the wider of which being 77 ft. 6 in. The new roof comprised a series a wrought iron pitched truss, supported on longitudinal beams and columns, originally with a lantern along the top of both pitches. The roof represents an example of the iron-trussed pitched roof train shed, an approach which had been pioneered by the London & Birmingham Railway at Euston in 1837 and is consequently referred to as the 'Euston Roof'. The approach was common to a number of stations during the 19th century, particularly those of the LNWR, though the scale and survival of Huddersfield's example is especially notable. On August 10th, 1885, a collapse occurred during the construction of the station roof, killing four men and injuring several others. A number of defects in the roof design were found, mostly around insufficient structural stability to withstand loading from high winds. The roof was reconstructed with improved structural design by Joseph Butler & Co. of the Stanningley Ironworks. The roof was finally completed in 1886. Smaller canopies were also installed over platforms 2 and 3.

2.1.14 Huddersfield Station has been subject to a number of changes and alterations between the 1890s and the early 21st century. These have resulted in the alteration of elements of the station, although it should be noted that the majority of the major elements of the station are largely unchanged from its expansion in the 1880s. It remains an impressive and iconic landmark that continues to serve 21st century train passengers, retaining its primary purpose as a transport hub for people to navigate across the Pennine landscape.

2.1.15 The history and significance of Huddersfield Station is further discussed in the *Huddersfield Station Statement of Significance* (Atkins, 2018), submitted as a supporting document to the Listed Building Consent application.

3. STANDARDS AND GUIDANCE

3.1.1 The archaeological buildings investigation, recording and reporting shall be undertaken in accordance with the following standards and guidance:

- Chartered Institute for Archaeologists, 2014a (Revised 2021). *Code of Conduct*;
- Chartered Institute for Archaeologists, 2014b. *Standard and Guidance for the archaeological investigation and recording of standing buildings or structures*;
- Chartered Institute for Archaeologists, 2014c. *Standard and Guidance for the creation, compilation, transfer and deposition of archaeological archives*;
- Department of Housing, Communities and Local Government, 2019 (Revised 2021). *National Planning Policy Framework*;
- English Heritage [now Historic England], 2008. *Conservation Principles Policies and Guidance: For the sustainable management of the historic environment*;
- Historic England, 2015a. *Historic Environment Good Practice Advice in Planning: Note 2 – Managing Significance in Decision-Taking*;
- Historic England, 2015b. *Digital Image Capture and File Storage Guidelines for Best Practice*;
- Historic England, 2016. *Understanding Historic Buildings: A guide to good recording practice*;
- Historic England, 2017 (Second Edition). *Historic Environment Good Practice Advice in Planning: Note 3 – The Setting of Heritage Assets*; and
- Institute of Historic Building Conservation (IHBC), 2007. *Code of Conduct*.

4. SCOPE OF WORKS

4.1.1 Historic building recording, as outlined in this WSI, is required to be undertaken of the following structures comprising Roofs A, B and C of the Grade I Listed Huddersfield Station, as set out in Table 4-1 below. These structures are shown on the following Drawings, submitted as part of the Network Rail (Huddersfield to Westtown (Dewsbury) Improvements) Order submission and the associated Listed Building Consent application for Huddersfield Station:

- Planning Drawing (151667-TSA-W3-000-DRG-T-LP-162932)
- All Roofs
  - Existing Roof Plan (151667-TSA-30-MVL3-DRG-T-LP-166001)
  - Existing and Proposed Roof Sections (151667-TSA-30-MVL3-DRG-T-LP-166004, 151667-TSA-30-MVL3-DRG-T-LP-166008)
- Roof A
  - Existing and Proposed Plans (151667-TSA-30-MVL3-DRG-T-LP-166045, 151667-TSA-30-MVL3-DRG-T-LP-166046)
  - Existing and Proposed Sections (151667-TSA-30-MVL3-DRG-T-LP-166047, 151667-TSA-30-MVL3-DRG-T-LP-166048)
- Roofs B and C
  - Existing Plans (151667-TSA-30-MVL3-DRG-T-LP-166072, 151667-TSA-30-MVL3-DRG-T-LP-166073)
  - Existing Sections (151667-TSA-30-MVL3-DRG-T-LP-166074, 151667-TSA-30-MVL3-DRG-T-LP-166075).

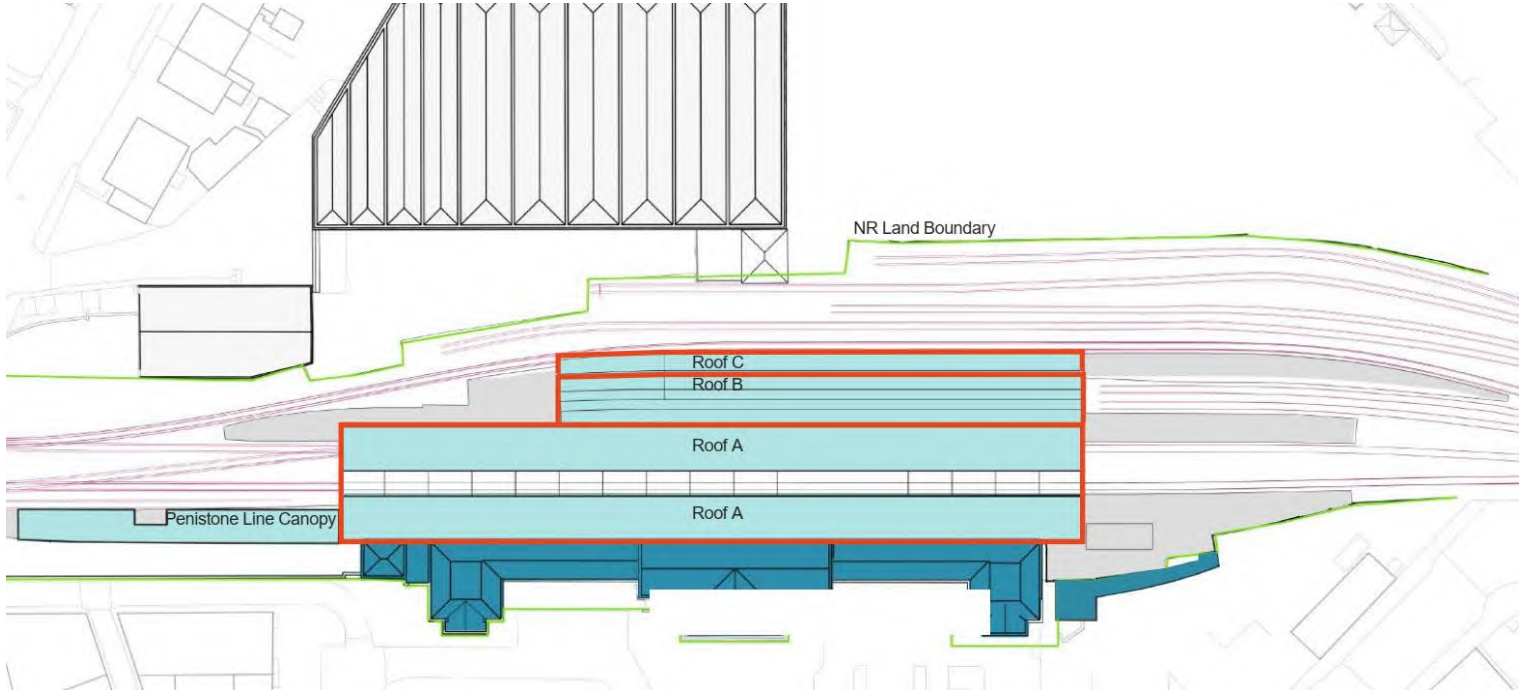
4.1.2 Engineering drawings showing the detailed design developed during the period following the approval of the Order will be provided to the building recorder where appropriate.

Table 4-1 Structures to be recorded

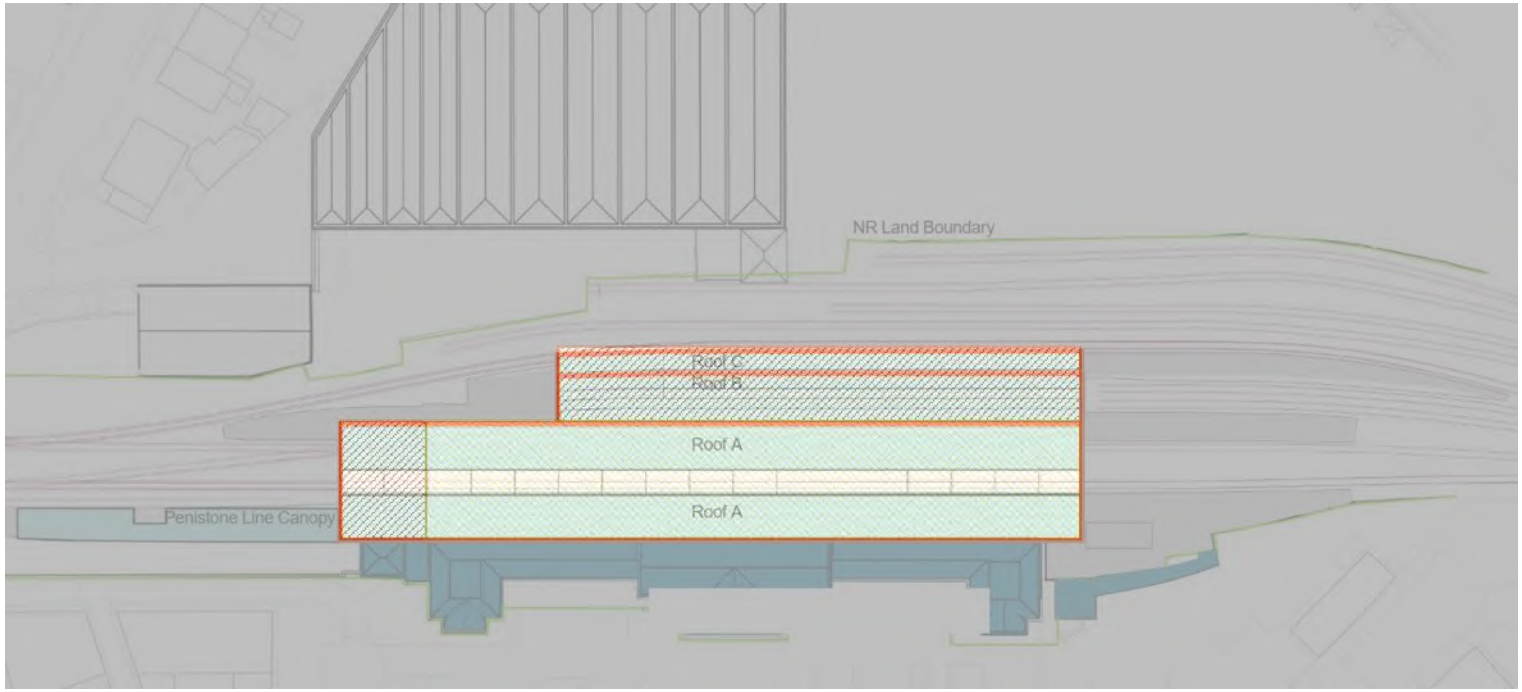
Asset name	NGR	Route Section	Summary Description	Level
Huddersfield Station Roof A - Retained Section	SE 14313 16909	Huddersfield	Description: Huddersfield Station was constructed in 1846-1850, designed by architect JP Pritchett. The station only had one platform until its expansion in 1886, when the roof and island platform were added. The platforms are covered by a double pitched truss roof of wrought iron with elaborate bosses at the intersection of bracing members. Setting: The setting of the station contributes considerably to its significance. Views to and from the station (including visibility of the roofs), evidencing relationships with the surrounding townscape and railway infrastructure make an important contribution. The experience of the station by those using it, including moving through it on foot and by train also contributes to the station's setting. Significance: The station is of exceptional interest as a surviving 'Heroic Age' (1841-50) station constructed in a monumental Classical style. The asset derives much of its significance from its historic and architectural interest as a well-preserved mid-19th century station; this is enhanced by its continued use and the limited alterations which have occurred since its expansion in the 1880s. Its association with architect JP Pritchett adds to its significance, as does its relationship with surrounding historic railway infrastructure. The station derives significance from a number of its elements, including the roofs representing the rare survival of a 'Euston roof'. Additionally, the architectural interest of its grand facade and prominent location is intrinsically linked to the development of this part of Huddersfield's townscape, particularly St George's Square, with the station still forming a key element of the centre of Huddersfield.	Level 2 (Enhanced)
Huddersfield Station Roof A – Bays to be removed at Manchester end				Level 3
Huddersfield Station Roofs B & C				

4.1.3 The location of these structures (including extent of the different levels of recording required) is shown in the location plans in Inserts 4-1 to 4-3 below, with photographs of the structures included in Inserts 4-4 to 4-6.

Insert 4-1 Location Plan of Huddersfield Station.



Insert 4-2 Plan of Huddersfield Station, showing the extents of Roofs A, B and C.



Insert 4-3 Plan of Huddersfield Station, showing the extents of the Historic Building Recording scope for Roofs A, B and C – the areas to be recorded to Level 3 are shown in darker hatching, with the area to be recorded to Level 2 (Enhanced) in lighter hatching.

Insert 4-4 Trainshed roof at Huddersfield Station, viewed from southern end of island platform; the main span of 'Roof A' is in the foreground while the smaller secondary 'Roof B' span can be seen on the left.

Insert 4-5 Trainshed roofs viewed from the northern end of the platforms, showing gable ends of principal 'Roof A' (left) and 'Roof B' (right). 'Roof C' is visible cantilevered off the edge of 'Roof B' on the far right.

Insert 4-6 View of the trainshed roofs and platforms from Westgate, at the southern end of the station.

Access requirements

4.1.4 The building recorder will be provided with a number of existing resources as outlined in paragraphs 5.2.4 and 5.3.4. Notwithstanding the availability of this existing information, access to the station will be required to undertake building recording to the required levels.

4.1.5 Liaison with the TRU Alliance, facilitated via the Client, ***must*** be undertaken to make access arrangements for the survey of the structure for all visits. When surveying the structure from the station platforms, trackside working protocol must be adhered to.

4.1.6 Survey of the structure will likely be required to take place during the programmed scheme construction works at the Station. Consequently, liaison with the TRU Alliance and the Client will define working procedures, taking account of restrictions and safety processes in place in light of the construction works taking place at any given survey time.

4.1.7 Where required, access to the roof structures will be facilitated via scaffolding which will be erected in line with the relevant phases of construction. It may be necessary for the building recorder to undertake more than one site visit, for example to photograph the roofs prior to the commencement of construction activity and then at a later stage during the window of the construction programme where access can be facilitated via scaffolding. Subsequent survey visits may also be required if there is opportunity to undertake any recording of the structure during or after deconstruction, in the case of the recording of Roofs B and C and the southern section of Roof A to be removed (see below, 5.2.12 to 5.2.14). Should this be the case, full details of any access restrictions relating to the deconstruction process and/or storage location of deconstructed elements including access requirements will be provided to the building recorder.

4.1.8 If the railway corridor is to be accessed, track access must be in place prior to undertaking the survey and will be arranged. **Track access should be considered as only to be utilised if absolutely essential to the survey.** Other approaches should be exhausted in planning before the need for track access is confirmed.

4.1.9 Vehicle parking will be available at the station via prior arrangement with the Client and Network Rail. The survey does not require any access to third party land.

4.1.10 Specific requirements for access procedures will be included in the relevant Work Package Plans (WPPs) and Task Brief Sheets (TBSs) for the surveys (see below, Section 6.2).

5. METHODOLOGY

5.1 Documentary research

5.1.1 Documentary research shall be undertaken to supplement the currently known information contained within the Environmental Statement for the Order Scheme, the Heritage Assessment produced to accompany the Listed Building Consent application, and the *Huddersfield Station Statement of Significance* (Atkins, 2018). This shall involve examination of available historic maps, photographs, plans and other records held by the local record office, Network Rail or other archives as required.

5.1.2 Some existing resources will be provided to the Contractor by Network Rail. These are identified in the following sections of this WSI.

5.2 Historic building recording to Level 3 standard

5.2.1 A Level 3 record is defined in the Historic England guidance as: "*an analytical record*" which will produce an analysis of the building's development and use and discuss in detail the evidence on which this analysis is based. The record may contain some discussion of the structure's stylistic or historic context.

Drawn record

5.2.2 A drawn record shall be prepared of Roofs B, C and the section of Roof A (at the southern end of the station) to be removed. As a minimum the drawn record shall include:

- Dimensioned / measured plans of the structure as existing. These will identify evidence for phasing, alteration, structural features of historic significance, evidence for fixtures and fittings etc. All plans will have a grid north point and an appropriate drawn metric scale clearly visible. Existing plans may be used where available, subject to verification of their accuracy. Such available existing plans will be provided by Atkins / Network Rail (see below, 5.4.4);
- Measured cross-sections or long-sections to illustrate the vertical relationships within the structures (for example heights, the form of trusses);
- Measured drawings to show the form of any architectural decoration (for example the moulded roundels in the truss) or small-scale functional detail not easily captured by photography;
- A site plan relating the trainshed roof structures to the wider Station building, platforms and other structures (e.g. tea rooms, warehouses);
- A plan or plans identifying the location and direction of accompanying photographs;
- Copies of earlier drawings i.e. from the construction of the roofs, phases on notable alteration etc. (available from Network Rail National Records Group (NRG) archives) These will be provided by Network Rail (see below, 5.3.4);
- Three-dimensional projections when these are of value in understanding the building; and
- Phased drawings, showing the historic development of the roofs, to be included if appropriate. Successive phases of a building's development may be shown by graded tone (dark to light, with the darker being the earlier) or by colour, by sequential diagrams or by annotation.

5.2.3 All drawings shall be annotated with information on structural detail, changes in building material, evidence for phasing, function and alteration, and any other relevant architectural

detail. All drawings will be produced using drawing conventions as laid out in *Understanding Historic Buildings: A guide to good recording practice* (Historic England 2016).

5.2.4 Existing plans for each roof will be supplied by Network Rail and may be employed as the basis for the drawn record. In the case of Huddersfield Station, existing measured plans of the roof structures are available, including:

- Point cloud data from laser scans of Roof A (available in revit model CAD format)
- Point cloud data from laser scans of Roofs B and C (available in unprocessed POD format)
- Measured drawings of structures previously produced for the Listed Building Consent application; and
- Archival drawings of the structures from the Network Rail NRG archives.

Photographic record

5.2.5 A photographic record of Roofs B, C and the section of Roof A to be removed will be made using a high resolution DSLR camera with a minimum of 10 megapixel resolution to capture colour images, using a tripod where necessary. Cameras with an FX sensor, which is close to equivalency with 35mm film, are preferable to DX sensor equipped cameras. The photographic record of the site shall be used to amplify and illuminate the archive drawings and supplement and verify the written record.

5.2.6 As a minimum the photographic record will include:

- General views of each structure in its wider setting and landscape, where these can be safely obtained from the Station, surrounding public rights of way or from third party land where access has been granted;
- The overall appearance of the structures, including oblique and parallel shots. Typically a series of oblique views showing all external elevations of the structures, to give an overall impression of its size and shape. Where an individual elevation embodies complex historical information, views at right angles to the plane of the elevation and detail shots will be required;
- The overall appearance of the interior of the structure, including the space under the train shed roof (i.e. from the platforms beneath the roof);
- Any external architectural detail, structural, functional or decorative, which is relevant to the structure's design, development or use and which does not show adequately on general photographs;
- Any dates or other inscriptions; any signage, makers' plates or graffiti which contribute to an understanding of the building. A transcription should be made wherever characters are difficult to interpret;
- Any further views considered to reflect the overall appearance of the structure from the station's setting e.g. from Westgate; and
- Copies of maps, drawings, views and photographs, illustrating its development (As available from NRG via Network Rail or Kirklees Archives).

5.2.7 Care should be taken to ensure sharply focused well composed photographs are taken and when appropriate the camera should be set up and levelled on a tripod, for example when recording facades and larger interior spaces. The use of perspective shift lenses or pan and tilt adaptors may be necessary in some situations to achieve an acceptable image. Alternatively, lens distortion may be removed post-capture by software but this must be recorded in the photographic catalogue and details of the software used given in the report. Original pre-correction images should be included in the site archive. Photographs should be taken with a low ISO setting and low shutter speed to reduce noise in the images captured. All photographs forming part of the record will be in sharp focus with an

appropriate depth of field. All photographs will have a suitable scale (for example, 2m rather than 1m ranging pole, 10cm scales for detail) clearly visible in each photo.

5.2.8 Digital images shall be supplied in RAW and JPG format and shall be taken using the highest resolution possible. All digital photography and subsequent data storage shall follow Historic England guidance provided in *Digital Image Capture and File Storage Guidelines for Best Practice.*[7]

5.2.9 A photographic register detailing (as a minimum) location, direction and subject of shot must accompany the photographic record. The position and direction of each photograph and slide should be noted on a plan of each structure. The contractor must include metadata embedded in the image file. This metadata must include the following: the commonly used name for the site being photographed, the relevant centred OS grid coordinates for the site to at least six figures, the relevant township name (**Huddersfield**) the date of photograph, the subject of the photograph, the direction of shot and the name of the organisation taking the photograph.

Written record

5.2.10 A written record of each structure will be made on site. This will include the following:

- The precise location of the structure as an address and in the form of a National Grid reference (NGR);
- A note of any statutory designation (i.e. Listing, Conservation Area);
- The date when the record was made, the name(s) of the recorder(s) and the location of any archive material; and
- A summary statement describing the building's type or purpose, historically and at present, its materials, possible date(s), including any evidence of phasing, and notable aspects of its setting, so far as these are apparent from the inspection.

5.2.11 The written recording of the structures, historic surfaces and associated heritage assets shall be undertaken using pro forma record forms and should include examinations of the buildings' exterior and interior fabric.

Recording during and after deconstruction

5.2.12 The Listed Building Consent for the Scheme at Huddersfield Station grants the removal of Roofs B and C, and the section of Roof A at the southern end of the station.

5.2.13 There may be opportunity for the historic building recording to include survey of elements or sections of the roofs to be removed either during or after the process of deconstruction. The recording contractor should liaise with the Client and the Project Heritage Lead, as appropriate, to determine if such an opportunity is reasonably practicable, within the context of the Scheme's construction methodology and programme. If such an opportunity is identified, the scope of any such recording should be developed and agreed with Client and Project Heritage Lead, as appropriate.

5.2.14 If there is any opportunity to conduct survey of elements or sections of the roofs during or after deconstruction, this should be used to supplement the recording undertaken prior to deconstruction. It may be more appropriate, with regard to scope or programme, for any such recording to be incorporated into the post-fieldwork recording report as a supplementary addendum. This may be done at a later stage, to be agreed with Kirklees

[7] Historic England, 2015b. *Digital Image Capture and File Storage Guidelines for Best Practice.*

Council and West Yorkshire Archaeological Advisory Service (WYAAS).

5.3 Historic building recording to Level 2 (Enhanced) standard

5.3.1 A Level 2 (Enhanced) record is taken from Historic England guidance on Level 2 and Level 3 record and intended to be read as: "*an enhanced descriptive record*" which will produce an account of its development and use but will not discuss in detail the evidence on which this analysis is based. The record may contain some discussion of the structure's stylistic or historic context.

Drawn record

5.3.2 A drawn record shall be prepared of the retained section of Roof A. As a minimum the drawn record shall include:

- Dimensioned / measured plans of the structure as existing. These will identify evidence for phasing, alteration, structural features of historic significance, evidence for fixtures and fittings etc. All plans will have a grid north point and an appropriate drawn metric scale clearly visible. Existing plans may be used where available, these will be provided by Network Rail (see below, 5.3.4);
- Measured drawings of significant structural, functional or architectural detail which cannot be captured in a single photograph or are so complex as to render features difficult to interpret in a photograph;
- Measured cross-sections or long-sections to illustrate the vertical relationships within the structure (for example heights, the form of trusses);
- A site plan relating the structure to the wider Station building, platforms and other structures (e.g. tea rooms, warehouses);
- A plan or plans identifying the location and direction of accompanying photographs;
- Copies of earlier drawings i.e. from the construction of the roofs, phases on notable alteration etc. (available from Network Rail NRG archives). These will be provided by Network Rail (see below, 5.3.4); and
- Phased drawings, showing the historic development of Roof A, to be included if appropriate. Successive phases of a building's development may be shown by graded tone (dark to light, with the darker being the earlier) or by colour, by sequential diagrams or by annotation.

5.3.3 All drawings shall be annotated with information on structural detail, changes in building material, evidence for phasing, function and alteration, and any other relevant architectural detail. All drawings will be produced using drawing conventions as laid out in *Understanding Historic Buildings: A guide to good recording practice* (Historic England 2016).

5.3.4 Existing plans for each bridge will be supplied by Network Rail and may be employed as the basis for the drawn record, subject to verification and checking for accuracy. In the case of Huddersfield Station, existing measured plans of the roof structures are available, including:

- Point cloud data from laser scans of Roof A (available in revit model CAD format)
- Measured drawings of structures previously produced for the Listed Building Consent application; and
- Archival drawings of the structures from the National Rail NRG archives.

Photographic record

5.3.5 A photographic record of the retained section of Roof A will be made using a high resolution DSLR camera with a minimum of 10 megapixel resolution to capture colour images, using a tripod where necessary. Cameras with an FX sensor, which is close to equivalency with 35mm film, are preferable to DX sensor equipped cameras. The photographic record of the

site shall be used to amplify and illuminate the archive drawings and supplement and verify the written record.

5.3.6 As a minimum the photographic record will include:

- General views of each structure in its wider setting and landscape, where these can be safely obtained from the Station, surrounding public rights of way or from third party land where access has been granted;
- The overall appearance of the structure, including oblique and parallel shots. Typically a series of oblique views showing all external elevations of the structure, to give an overall impression of its size and shape. Where an individual elevation embodies complex historical information, views at right angles to the plane of the elevation and detail shots will be required;
- The overall appearance of the interior of the structure, including the space under the train shed roof (i.e. from the platforms beneath the roof);
- Any external architectural detail, structural, functional or decorative, which is relevant to the structure's design, development or use and which does not show adequately on general photographs;
- Any dates or other inscriptions; any signage, makers' plates or graffiti which contribute to an understanding of the building. A transcription should be made wherever characters are difficult to interpret;
- Any further views considered to reflect the overall appearance of the structure from the station's setting e.g. from Westgate; and
- Copies of maps, drawings, views and photographs, illustrating its development (as available from NRG via Network Rail or Kirklees Archives).

5.3.7 Care should be taken to ensure sharply focused well composed photographs are taken and when appropriate the camera should be set up and levelled on a tripod, for example when recording facades and larger interior spaces. The use of perspective shift lenses or pan and tilt adaptors may be necessary in some situations to achieve an acceptable image. Alternatively, lens distortion may be removed post-capture by software but this must be recorded in the photographic catalogue and details of the software used given in the report. Original pre-correction images should be included in the site archive. Photographs should be taken with a low ISO setting and low shutter speed to reduce noise in the images captured. All photographs forming part of the record will be in sharp focus with an appropriate depth of field. All photographs will have a suitable scale (for example, 2m rather than 1m ranging pole, 10cm scales for detail) clearly visible in each photo.

5.3.8 Digital images shall be supplied in RAW and JPG format and shall be taken using the highest resolution possible. All digital photography and subsequent data storage shall follow Historic England guidance provided in *Digital Image Capture and File Storage Guidelines for Best Practice.*[8]

5.3.9 A photographic register detailing (as a minimum) location, direction and subject of shot must accompany the photographic record. The position and direction of each photograph and slide should be noted on a plan of each structure. The contractor must include metadata embedded in the image file. This metadata must include the following: the commonly used name for the site being photographed, the relevant centred OS grid coordinates for the site to at least six figures, the relevant township name (**Huddersfield**) the date of photograph, the subject of the photograph, the direction of shot and the name of the organisation taking

[8] Historic England, 2015b. *Digital Image Capture and File Storage Guidelines for Best Practice.*

the photograph.

Written record

5.3.10 A written record of the retained section of Roof A will be made on site. This will include the following:

- The precise location of the structure as an address and in the form of a National Grid reference (NGR);
- A note of any statutory designation (i.e. Listing, Conservation Area);
- The date when the record was made, the name(s) of the recorder(s) and the location of any archive material; and
- A summary statement describing the building's type or purpose, historically and at present, its materials, possible date(s), so far as these are apparent from the inspection.

5.3.11 The written recording of the structures, historic surfaces and associated heritage assets shall be undertaken using pro forma record forms and should include examinations of the buildings' exterior and interior fabric.

5.4 Post-Fieldwork reporting

5.4.1 A single historic building recording report shall be provided, presenting the result of all the historic building recording surveys for the entire Huddersfield Station trainshed roof. This single report will present the results of both:

- The Level 3 Historic Building Recording of the sections of Roof A at the Manchester end to be removed and Roofs B & C; and
- The Level 2 (Enhanced) Historic Building Recording of the retained section of Roof A.

5.4.2 As a minimum this historic building recording report shall include:

- A non-technical summary of the results (an 'abstract');
- Acknowledgements to all those who have made a significant contribution to the making of the record, or who have given permission for copyright items to be reproduced;
- A description of the background to and circumstances of the work. This shall include the dates on which the survey was undertaken;
- The structures' location, parish and National Grid References (NGRs);
- Aims and objectives of the historic building recording;
- A description of the methodology used for the survey;
- Historical background;
- A longer summary statement. This account should summarise the structure's form, function, date and sequence of development. The names of architects, builders, patrons etc. should be given. Its purpose is to serve as an introduction to the more detailed body of a record that may follow, for users who may need a summary of the report's findings;
- Interpretation of the results and assessment of the significance of the findings of the historic building recording on a local, regional and national basis. This should draw on the conclusions of the *Huddersfield Station Statement of Significance*;
- A discussion of the published sources relating to the structure and its setting, an account of its history as given in published sources, an analysis of historic map evidence (map regression) and a critical evaluation of previous records of the building, where they exist;
- A summary of the findings of any specialist reports (for example paint analysis);
- A discussion of the building's past and present relationship to its setting e.g. its part in the wider Station and group of buildings around it, its visual importance as a landmark, etc.;

- Any further information from documentary sources, published or unpublished, bearing on any of these matters, or bearing on the circumstances of its building, craftsmen and use, with a note on the sources of the information;
- General and detailed location plans at appropriate scales, showing the location of the building. The general location plan shall be presented at not less than 1:10,000 scale, and detailed location plans shall be presented at not less than 1:100 scale;
- Plan drawings presenting the results of both the Level 3 and Level 2 (Enhanced) Historic Building Recordings. Drawings shall be presented at an appropriate scale and in accordance with the guidance and conventions provided in Understanding Historic Buildings: A Guide to Good Recording Practice.[9] All elevations will have an appropriate drawn metric scale clearly visible and should be cross-referenced to the relevant plans and overall site plan;
- Reproduction of the complete photographic record produced at a high resolution and at sufficient size to make the detail in each photograph fully visible upon reproduction;
- A detailed selection of colour digital photographs to illustrate the written report;
- A condition survey of the retained section of the roof, produced in context of the proposed strengthening of the retained section of Roof A. This will be provided by Network Rail / TRU Alliance for inclusion as an appendix of the historic building recording report.
- Full bibliographic and other references, including cartographic sources, or a list of the sources consulted (in long reports it is preferable to include both). Websites which may prove to be ephemeral should be avoided as references wherever possible; where their use is unavoidable the full web address and the date on which the site was consulted should be noted.
- A glossary of architectural or other terms likely to be unfamiliar to readers;
- Photographic registers as an appendix in addition to drawn photographic plans detailing the position and direction of each shot at an appropriate scale;
- Index to and location of the archive;
- Copy of this WSI within an appendix; and
- OASIS form within an appendix.

5.4.3 In addition to the specific requirements identified above, the report shall include:

- A title page, which includes the name of the project, the title of the report, the name of the Sub-Consultant.
- A contents list; a list of illustrations or figures;
- The logo of the Client shall appear on the front cover of the report;
- A unique report number or reference;
- Report author(s) and company/organisation details where appropriate;
- Date when the report was completed;
- An accurate 6 figure NGR grid reference centred on the project location;
- Clear reference to the Listed Building Consent application, including the wording of the relevant condition; and
- Primary Record Numbers (PRN) referenced for structures recorded in the West Yorkshire HER (where applicable).

5.4.4 A draft of the report shall be submitted to the Project Heritage Lead for comment no later than four weeks after the completion of the fieldwork. Any comments provided by the

[9] Historic England, 2016. *Understanding Historic Buildings: A Guide to Good Recording Practice*

Project Heritage Lead shall be addressed within 5 working days of receipt and a revised draft submitted for approval. This revised draft will subsequently be submitted to Kirklees Council and West Yorkshire Archaeology Advisory Service (WYAAS) for comment and any comments provided by the Council or WYAAS shall be addressed within 5 working days of receipt.

5.4.5 When submitted to Kirklees Council for comment, the draft report should be submitted to the appropriate Conservation Officer responding to all discharge of condition applications for this structure. Contact details will be provided to the building recorder in advance of submission of the draft report.

5.5 Submission of report

5.5.1 When complete the historic building recording report shall be submitted the Project Heritage Lead for it to be sent to the following repositories:

- A digital and hard copy of the final report for Kirklees Council;
- A digital copy for West Yorkshire Historic Environment Record (HER), West Yorkshire Archive Service and the Archaeology Data Service (ADS).

5.5.2 In light of the requirement for the completed historic building report to be submitted to West Yorkshire HER, the Contractor must complete the report in accordance with the archiving requirements set out in the building recording specifications of the West Yorkshire Archaeological Advisory Service (WYAAS) (see below, Section 5.7 for further details).

5.6 Copyright

5.6.1 This document and its contents have been prepared and are intended solely for Client Purpose.

5.6.2 Network Rail assumes no responsibility to any other party in respect of or arising out of or in connection with this document and/or its contents.

5.7 Archiving

5.7.1 Post-fieldwork archiving shall be undertaken in accordance with the requirements of the Standard and Guidance for the creation, compilation, transfer and deposition of archaeological archives (CIfA 2014b), and the requirements of the building recording specification of WYAAS on behalf of West Yorkshire HER. Digital data generated during the recording works, including the full digital photographic archive shall be prepared in accordance with the requirements of the Archaeology Data Service (ADS). Photographs and reports should be archived used the ADS Easy online service.

5.7.2 Immediately upon completion of the finalised report, the report and any data or other documentation produced during the recording works shall be integrated into the site archive. The archive shall be stored in suitable conditions in a secure location until instructions are received from Network Rail for its transfer to the final repositories.

5.7.3 West Yorkshire HER support the Online Access to Index of Archaeological Investigations (OASIS) Project. The overall aim of the OASIS project is to provide an online index to the mass of archaeological grey literature that has been produced as a result of the advent of large-scale developer funded fieldwork. On completion of the report, the Contractor will make a copy accessible to the wider research community by submitting it to the OASIS Project.

5.8 Programme

5.8.1 An outline programme for the historic building recording is provided below:

Table 5-1 Programme for the historic building recording

Stage of Works		Timings
Site works / recording	Roof A (Retained Section)	Winter 2022 / Spring 2023
	Roof A (bays at Manchester end to be removed)	
	Roofs B &C	
	Recording during / post demolition (if appropriate / required)	TBC (Timescales to be arranged with TRU Alliance as appropriate)
Submission of draft report to the Project Heritage Lead Rail for comment		4 weeks after completion of fieldwork
Review of draft report		2 weeks from submission of draft report
Submission of draft report to Kirklees Council / WYAAS for comment		1 week from receipt of comments
Kirklees Council / WYAAS review of draft report		2 weeks from submission of draft report
Submission of final report to Project Heritage Lead ail (which will deposit with Kirklees Council; digital copy with West Yorkshire Historic Environment Record (HER), West Yorkshire Archive Service and the Archaeology Data Service (ADS), OASIS)		1 week from receipt of Kirklees Council / WYAAS comments

6. STANDARDS AND RESPONSIBILITIES

6.1 Project role definitions

6.1.1 The following project roles are relevant to this document:

- Network Rail are the Promotor of the Scheme;
- The Employer means BAM Nuttall, who will appoint the Contractor;
- Project Heritage Lead means the individual appointed by the Employer to fulfil this role;
- Contractor means the archaeological organisation appointed by the Employer to carry out the works as defined in this Written Scheme of Investigation (WSI); and
- The Curator means West Yorkshire HER, West Yorkshire Archaeological Advisory Service (WYAAS) and Kirklees Council archaeological officers and conservation officers, or their representatives on this project

6.2 Health and safety considerations

6.2.1 All works are to be carried out in accordance with the appropriate Chartered Institute for Archaeologists (CIfA) guidance standards, Health & Safety legislative requirements and TRU project procedures.

6.2.2 Staff undertaking the historic building recording shall undertake a project induction, which will be organised and led by the Employer, subject to the requirements of the TRU project.

6.2.3 The Contractor shall prepare project-specific Health and Safety Work Package Plans (WPPs) and Task Brief Sheets (TBSs), in line with the TRU project procedures for such WPPs and TBSs, and submit these to the Project Heritage Lead for approval via the TRU Alliance prior to starting on site. No work shall be undertaken on site until these documents have been approved by the TRU Alliance. If amendments are required to these documents during the works, the Project Heritage Lead and the Employer must be provided with the revised document at the earliest opportunity.

6.2.4 As detailed above, **track access should be considered as only to be utilised if absolutely essential to the survey.** Other approaches should be exhausted in planning before the need for track access is confirmed. Where required, for example at stations and for trackside surveys, work must be carried out under the direction and supervision of a Safe Work Leader (SWL), Separated Zone Working with Site Warden warning.

6.2.5 Any site supervision or accompaniment from the client team during the survey works will be outlined in the required WPP and TBS documents and must be adhered to.

6.2.6 As noted above in paragraphs 4.1.3 to 4.1.10, the building recording survey may need to be undertaken in multiple phases, including at times during which Huddersfield Station is subject to the scheme construction works. Liaison with the Client and TRU Alliance must be undertaken to understand the health and safety considerations specific to the construction works at any given time, with requirements for safe working taken into account and applied to the survey approach, details of which should be included within the required WPP and TBS documents as appropriate.

6.3 Monitoring

6.3.1 The Curators have a statutory duty to monitor fieldwork. Fieldwork may be subject to monitoring visits by the Project Heritage Lead and the relevant Curator(s). The Project Heritage Lead and Curator(s) will have unrestricted access to the records or any other information. The work will be inspected to ensure that it is being carried out to the required standards and that it will achieve the stated objectives in line with the approved WSI.

6.4 Communication and engagement

6.4.1 All enquiries on the archaeological works from Stakeholders and interested parties (including the media) should be referred to the Project Heritage Lead.

6.4.2 If confronted by members of the public, ensure communication is polite and respectful. If staff are abused verbally by members of the public or there is clear intent to harm staff, the Contractor should take appropriate action by either disengaging in conversation or exiting the site to seek safety. Any such incidents must be reported to the Project Heritage Lead immediately.

6.4.3 Any emergencies, near misses or close calls must be reported in accordance with the procedures set out within the relevant WPP and TBS for the survey works. This will include reporting both to the TRU Alliance and any on call supervisors for the works.

7. REFERENCES

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